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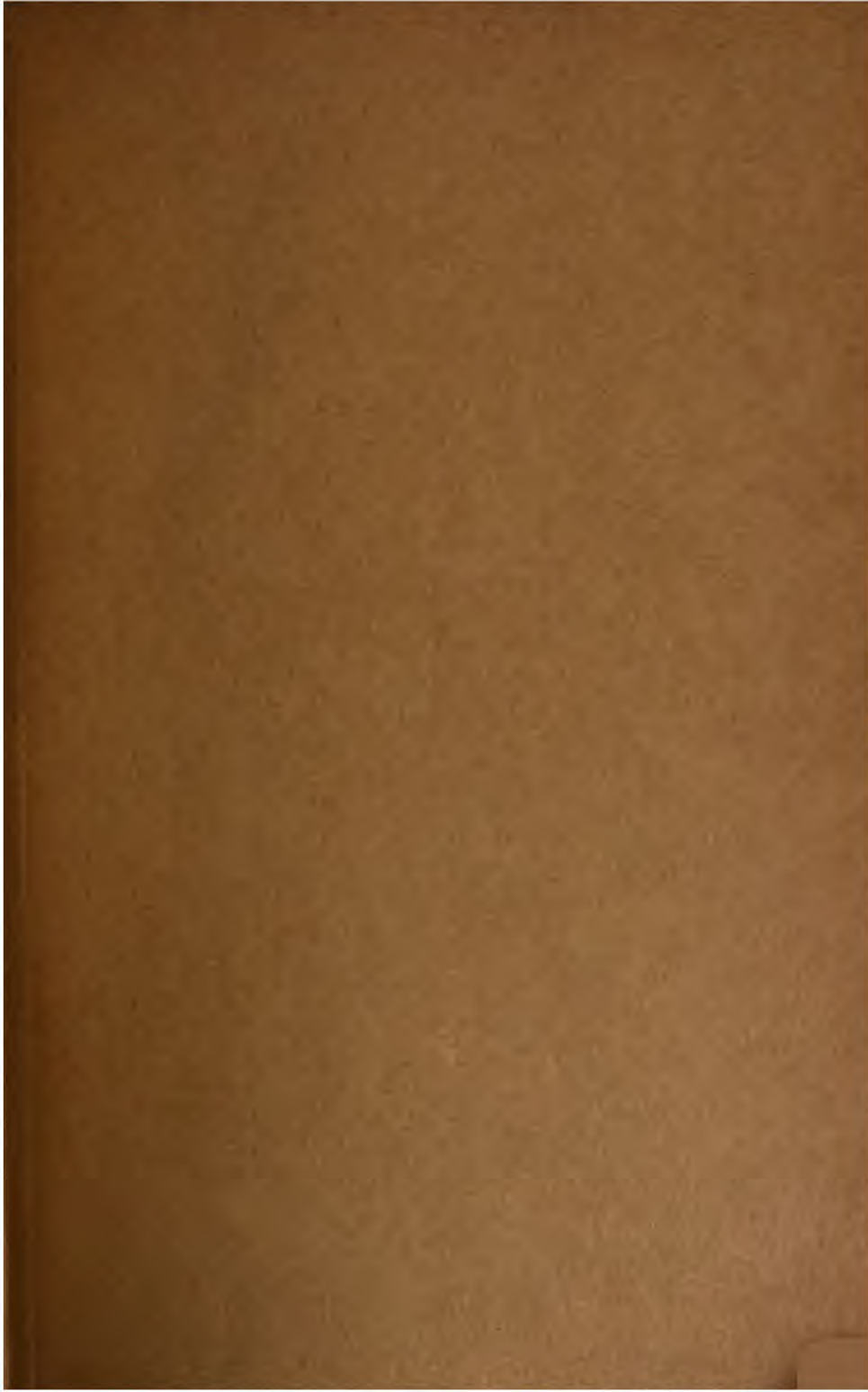
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**THE**  
**GLASGOW MEDICAL JOURNAL.**



THE  
GLASGOW MEDICAL JOURNAL.

EDITED BY  
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AND  
GEORGE HENRY EDINGTON, M.D.,  
FOR THE  
*Glasgow and West of Scotland Medical Association.*

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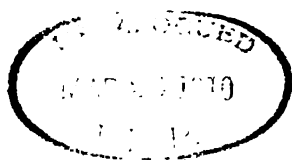
JANUARY TO JUNE, 1908.

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VOL. LXIX.

GLASGOW:  
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1908.





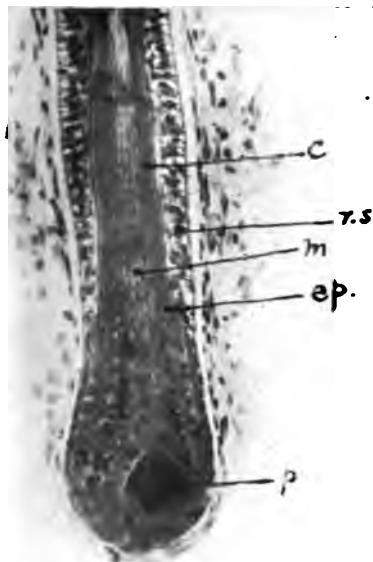


FIG. 1.



FIG. 2.

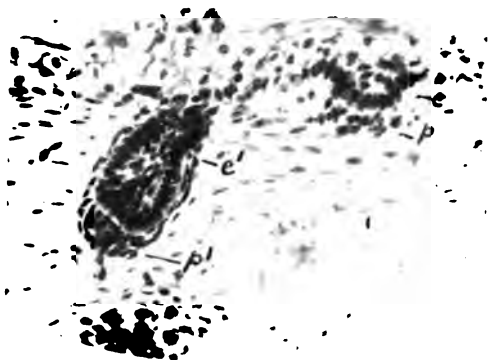


FIG. 3.



FIG. 4.



FIG. 5.





FIG. 6.

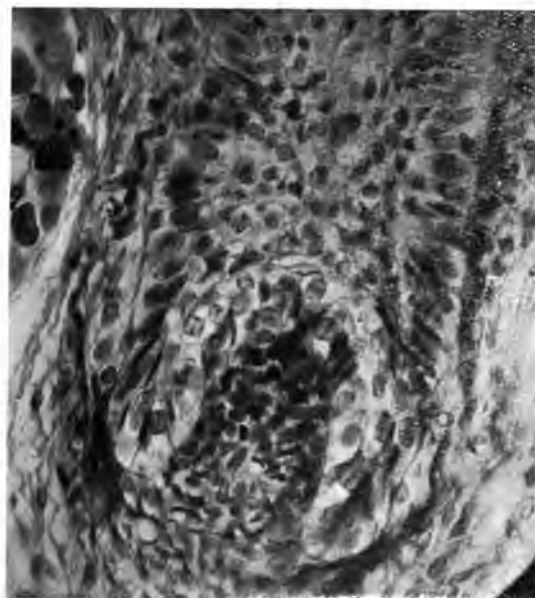


FIG. 8.



FIG. 7.



FIG. 9.







FIG. 10.

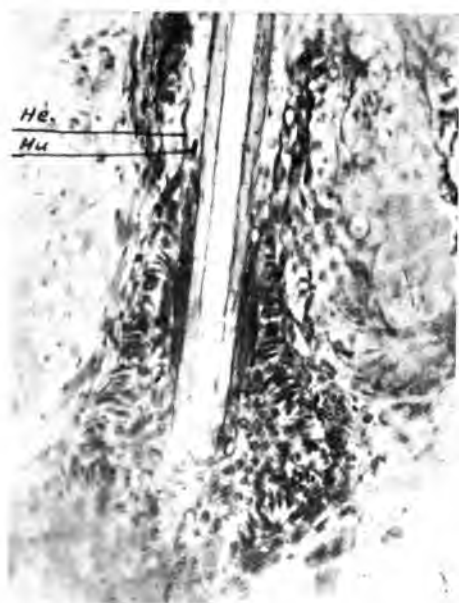


FIG. 12.



FIG. 11.

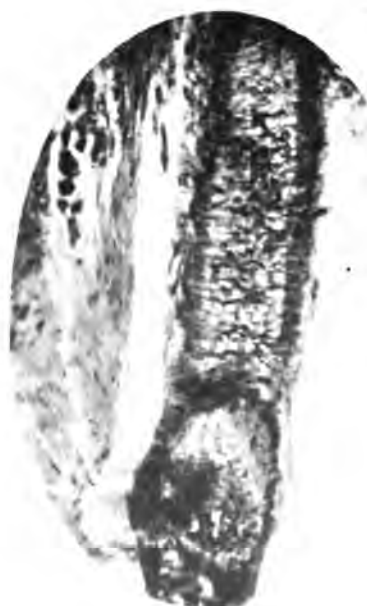


FIG. 13.



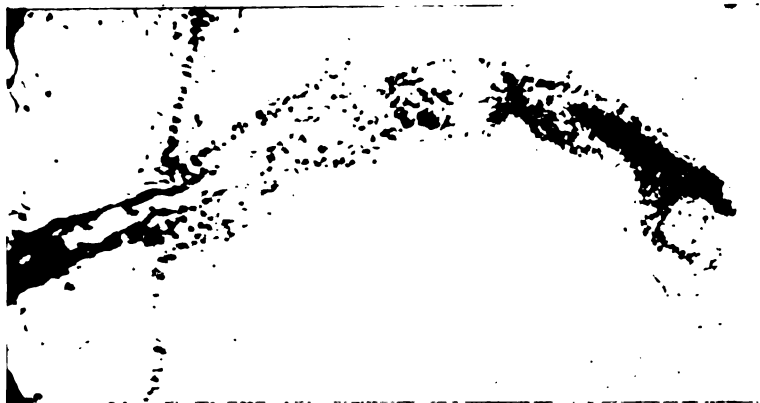


FIG. 16.

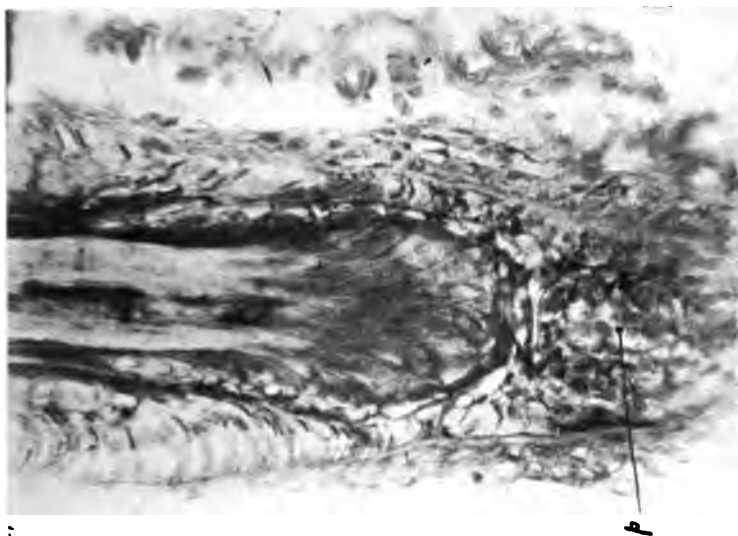


FIG. 15.

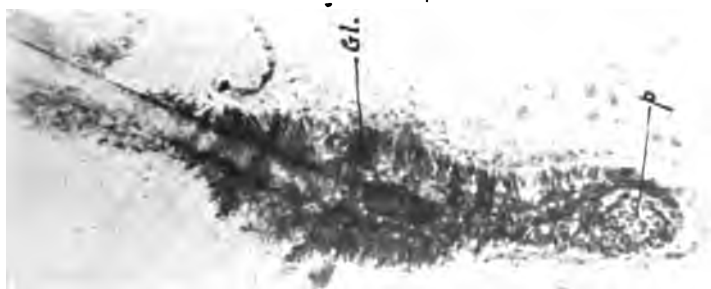
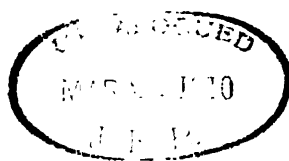
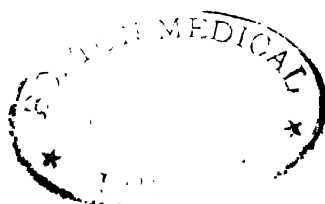


FIG. 14.





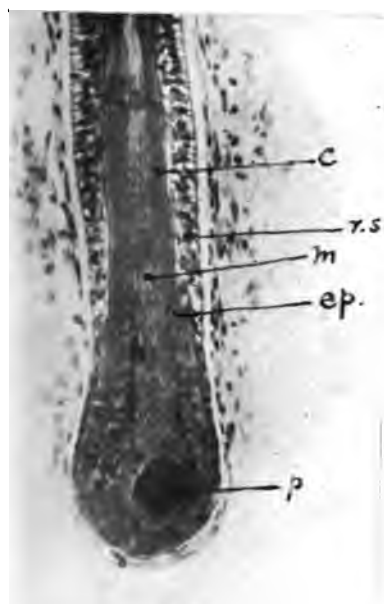


FIG. 1.

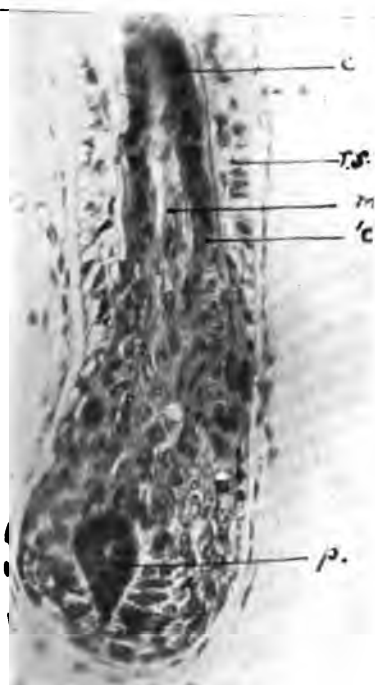


FIG. 2.

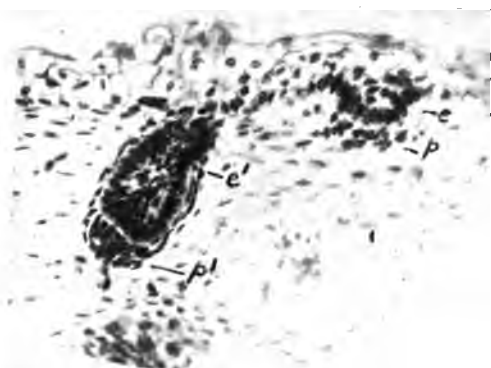


FIG. 3.



FIG. 4.



FIG. 5.



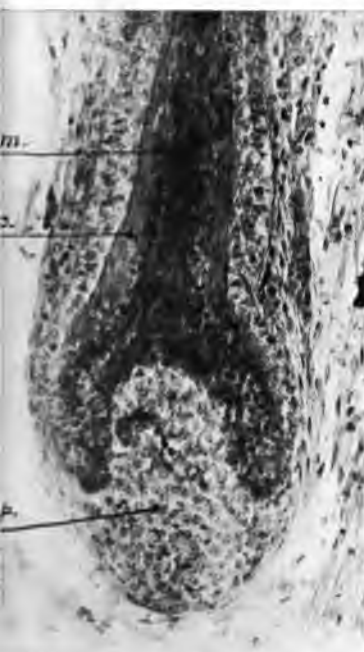


FIG. 6.



FIG. 7.

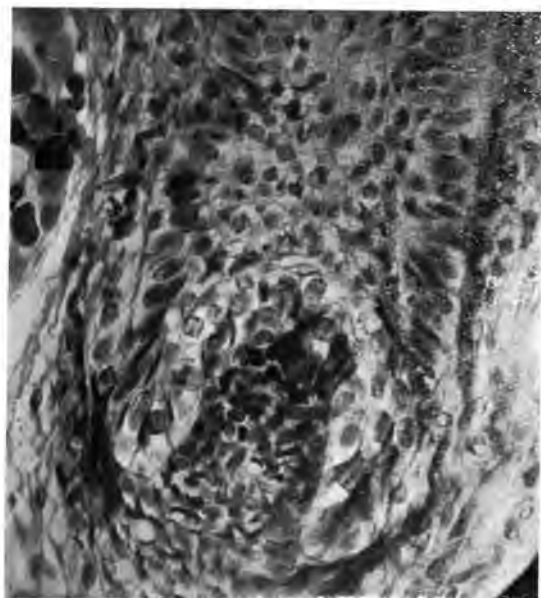


FIG. 8.



FIG. 9.







FIG. 10.

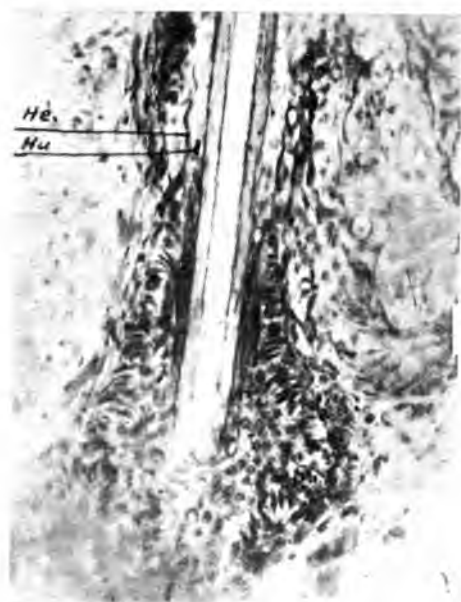


FIG. 12.

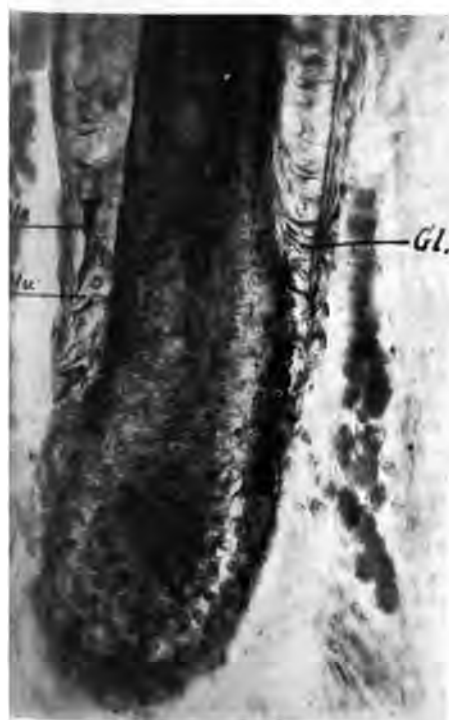


FIG. 11.



FIG. 13.



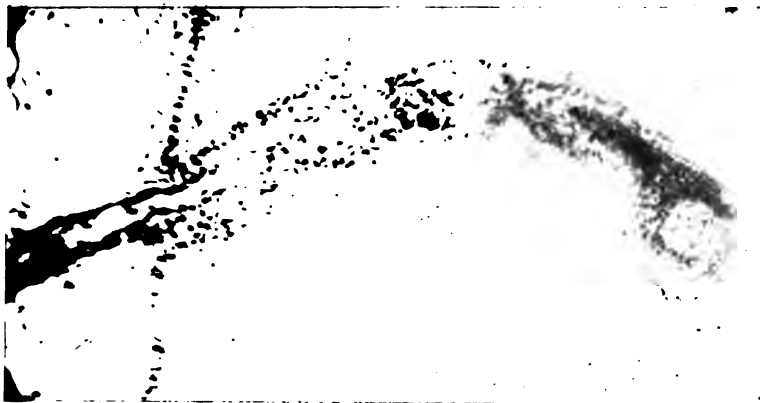


FIG. 16.

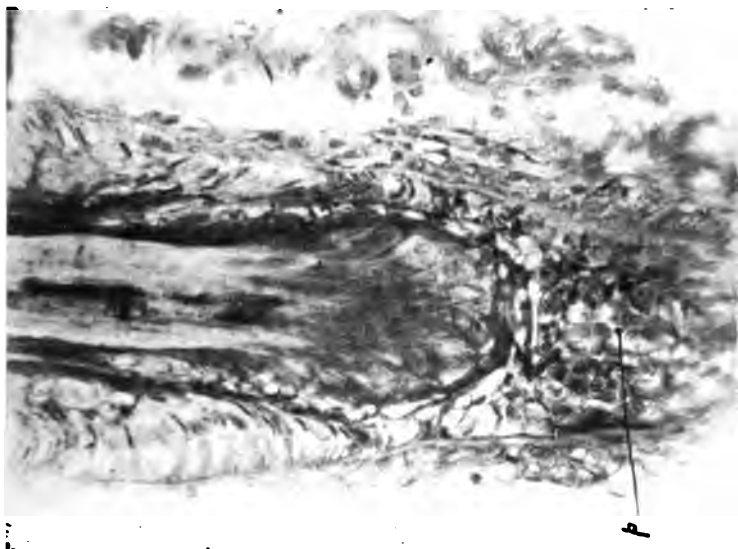
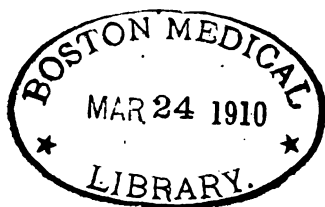


FIG. 15.



FIG. 14.





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THE  
GLASGOW MEDICAL JOURNAL.

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No. I. JANUARY, 1908.

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ORIGINAL ARTICLES.

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ON THE DEVELOPMENT, GROWTH, AND REPRO-  
DUCTION OF THE SHORT-LIVED HAIRS.

By THOMAS REID, M.D., LL.D.,  
Consulting Surgeon to the Glasgow Eye Infirmary.

THE hair, in common with other tegumentary organs, is a composite structure. Its essential component parts are (1) an involution or down-growth of the deepest stratum of the superficial or epiblastic layers of the common integument; (2) the addition of a portion of differentiated connective tissue—the future papilla—to the lower and dilated extremity of the descending epiblast.

The mutual relations of the epiblast and mesoblast, and the part they respectively play in the development and growth of the tegumentary appendages, is strikingly exemplified in the case of the hair. For it is from the superficial layer of the common integument—the stratum corneum, or horny layer—with the addition of prolongations from the basement membrane through the interepithelial spaces, which prolongations have been provisionally named “epithelial glia,”<sup>1</sup> that the

<sup>1</sup> *Glasgow Medical Journal*, 1905, vol. lxiii, p. 177.

substance of the cortex, or shaft of the hair, and its subsequent growth, is derived. On the other hand, the medulla, or soft core of the hair, originates from the epithelial cap over the papilla.

With these preliminary remarks on the constituent elements of the epiblast, and with the aid of the accompanying illustrations, it is possible to exhibit the successive stages of the evolution of the hair in a simple and perfectly intelligible manner. The examples which have been selected to illustrate these notes represent the successive stages in the development and growth of the hair. But in order to understand the significance of the terms employed, when applied to the rudimentary stages, a general view of the hair has been introduced (Figs. 1 and 2), in which the positions and relations of its anatomical elements are indicated by letters as follows:—*p.*, the papilla; *m.*, the medulla; *c.*, the cortex; *r.s.*, the root sheath; *e.*, the epiblast. These letters will serve to indicate the corresponding parts in their rudimentary stages.

The first indication of the hair follicle in the human embryo from the third to the fourth month is a down-growth—as already remarked—of the *deepest* stratum of the superficial or epithelial layers of the common integument, epiblast. This depression is accompanied by the formation of the rudimentary papilla (Fig. 3) opposite the dilated extremity of the follicle. Later the papilla is more defined, and the opposed convex surface of the follicle presents a slight depression (Fig. 4). At a more advanced stage the depression becomes deeper, and the projecting papilla occupies the cavity (Fig. 5). When the papilla is matured its upper segment is closely invested with the layers of the epiblast (Fig. 6). At this stage indications of the rudimentary medulla and the cortex simultaneously appear, the medulla originating in the epithelial cells at the vertex of the papilla, and, on either side, the cortex by the union of the descending and ascending layers of the epiblast, the stratum corneum, reinforced by the glia cells of the root sheath (Figs. 7 to 12). These latter are seen to take an upward direction (Fig. 10) in order to fall in line with the cortex, to which they contribute the principal part of the growing hair. Huxley's layer is not laid down till cortex formation is complete. Following this we have the formation of Henle's layer from the glia cells of the root sheath, which were previously contributing to the cortex, the connection with which having been cut off by Huxley's layer (see Figs. 11 and 12). A surface view of Henle's layer

is given in Fig. 13, showing its fenestrated or reticular character. The matured hair, with its constituent elements, is seen in Figs. 1 and 2. When the hair dies there is a provision of reserve epiblast, which extends beyond the root of the dead hair, and from which a new follicle, with its dilatation and rudimentary papilla, are derived: in Fig. 14 the papilla is complete, and the conditions for the development of the new hair are fulfilled. Sometimes the medulla alone dies—especially is this seen in the embryo—and is detached from its papilla. This remains intact and in a condition to reproduce a new hair (Fig. 15).

It would thus appear that the formation of the papilla and its investment by the epiblastic layers is essential to the growth of the hair in an upward direction, the medulla forming the central core which supports the enveloping cortex. The hair thus presents a beautiful, interesting, and instructive example of the adaptation of the elementary constituents of the cutaneous epiblast to the requirements of a given organ, and that without losing their characteristic properties; the medulla being composed mainly of epithelial cells, and the cortex arising from the stratum corneum and its homologue, the interepithelial glia cells of the root sheath.

*Note.*—For this investigation the *short-lived* hairs—cilia, lanugo of face—were chosen, because their different stages of development, growth, and reproduction may be seen in the embryo. Figs. 1 and 2 represent views of a *permanent* hair. It will be seen that in this case the cortex begins high up, so leaving abundance of cells below for permanent growth of hair.

#### DESCRIPTION OF ILLUSTRATIONS.

- FIG. 1.—Permanent hair, from dorsum of hand of fœtus at fifth month. Note epithelial cells (*ep*) at lower level than commencement of cortex. ( $\times 200$ .)
- FIG. 2.—Similar to Fig. 1. Note at  $\frac{1}{2}$  junction of epithelial cells (below) with lower part of cortex (above). ( $\times 400$ .)
- FIG. 3.—Lanugo, from forehead of fœtus at fourth or fifth month. Shows earliest indications of development on right. On left is further stage. *e*, *e*<sup>1</sup>, epiblast; *p*, *p*<sup>1</sup>, papilla. Note, both down-growths originate from deepest part of epiblast. ( $\times 200$ .)
- FIG. 4.—Same origin as Fig. 3. Further stage. ( $\times 200$ .)
- FIG. 5.—Same origin as Fig. 4. Further stage. Cells at upper end of follicle beginning to grow up *through* epiblast. ( $\times 200$ .)
- FIG. 6.—Cilium of fetal calf of third month. Shows early stage of cortex formation. ( $\times 200$ .)



#### 4 DR. NAPIER—*Calmette's "Ophthalmic-reaction" for*

- FIG. 7.—Cilium of eyelid of newborn child. Note reflected epithelium (*e*) capping papilla; also glia (*gl*) at the junction of the two surfaces. ( $\times 200$ .)
- FIG. 8.—Same as Fig. 7. Highly magnified. ( $\times 400$ .)
- FIG. 9.—Same origin as Fig. 7. Line of section has passed to one side of papilla. Medulla is seen enveloped in oval cells. *gl*, glia. Higher up the glia cells, from basement membrane, pass into and form cortex (*cf.* Fig. 7). ( $\times 400$ .)
- FIG. 10.—Lanugo from eyelid. Human subject, aged 49. *Hu*, Huxley's layer; and *Gl*, glia cells in root sheath, external to Huxley's layer. Note upward direction of these cells. ( $\times 400$ .)
- FIG. 11.—Cilium of newborn child. On left, Huxley's layer (*Hu*) is already laid down; Henle's layer (*He*) is being formed. Glia (*Gl*) is seen on right side to be still growing to form the cortex. (Does this unequal growth cause curving of cilium?) Keratohyalin bodies are seen in epithelium of medulla (opposite *Hu*). ( $\times 400$ .)
- FIG. 12.—Mature hair, eyelid of newborn child. Shows Huxley's and Henle's layers, the latter being formed from the glia of the root sheath. ( $\times 200$ .)
- FIG. 13.—Cilium of newborn child. Surface view of Henle's layer, showing it as a reticulated glia tissue. ( $\times 200$ .)
- FIG. 14.—Cilium of newborn child. The hair is dead, and is surrounded by feathery hypertrophied glia (*gl*). New papilla (*p*) is seen. ( $\times 200$ .)
- FIG. 15.—Cilium from newborn child, which was probably dead for some time before birth. Dead marrow with detached papilla (*p*), which may form a new hair. This suggests that hair probably does not die outright at same time as individual. ( $\times 400$ .)
- FIG. 16.—Cilium from ox calf, aged 3 months. Series of papillary remains is seen between living papilla and epidermis. ( $\times 200$ .)

#### CALMETTE'S "OPHTHALMO-REACTION" FOR TUBERCULOSIS: A SUGGESTION OF CAUTION IN ITS USE.

By ALEX. NAPIER, M.D., F.F.P.S.G.,  
Physician, Victoria Infirmary, Glasgow.

IN the last number of the *Glasgow Medical Journal*, p. 515, Dr. Maitland Ramsay, writing of ocular tuberculosis, remarks regarding the ocular reaction that it is "entirely local," and refers to its "freedom from danger." In an article in the *Lancet* (7th December, p. 1630) it is said of the new test that "it is harmless." Dr. W. MacLennan, in the *British Medical Journal* for 7th December, p. 1642, says of it that "it produces no constitutional disturbance, and, locally, usually nothing more than a slight ocular discomfort and lachrymation," and "to the eye of the healthy it is bland."

I am of opinion that these encomiums must be accepted with some reservation. The test frequently fails in cases plainly

tubercular: for example, in two cases in the last stage of pulmonary tuberculosis I could get no reaction at all, though I tried again and again. It sometimes gives a reaction of extreme violence: in one case (a small bunch of tubercular glands in the posterior triangle of the neck) the inflammation was very acute and severe, attended by brawny infiltration of both eyelids, much chemosis, and a copious, stringy, mucopurulent discharge—a condition which had not quite subsided at the end of a fortnight. But the experiences which have most impressed me, and which have most clearly suggested caution, are the following:—

CASE I.—Th. N., a man of 50, suffering from peripheral neuritis, had a few drops of the sterile tuberculin solution instilled into the right eye on 21st October; this was followed by *no reaction*. On 26th October one-tenth mgr. of new tuberculin was injected under the skin: no reaction, general or ocular. On 29th October, 1 mgr. new tuberculin was injected: no reaction, either general or local. On 2nd November, 5 mgr. new tuberculin were injected subcutaneously; next day—that is, *thirteen days* after instillation into right eye—this eye, and this eye only, was found to be acutely inflamed. Both eyelids were markedly oedematous, there was much swelling of the conjunctiva, and there was copious secretion. With this there was a mild general reaction, marked by slight rise of temperature.

CASE II.—M. H., a girl of 17, under treatment for lupus vulgaris, had a few drops of the sterile tuberculin solution instilled into left eye on 11th October; this was followed by a slight conjunctivitis. On 23rd October treatment by new tuberculin hypodermically, which had been suspended for a time while the patient was submitted to operation (curetting and cauterisation), was resumed, one-fifth mgr. being given on that date, 1 mgr. on the 26th, and 1 mgr. on the 29th, and with none of these injections was there any local ocular reaction. On 1st November, however, *twenty-one days* after the tuberculin solution had been instilled into the left eye, 1 mgr. was injected under the skin, and this was followed in an hour or two by a very sharp conjunctivitis involving only the left eye. On 5th November and on 9th November, and after each subsequent injection, the inflammation of *left eye* returned.

I submit that in these two cases we have evidence which

shows that the instillation of Calmette's solution, even when it gives rise no apparent reaction, brings about a local change of some kind, which responds sharply to the introduction of a moderate dose of tuberculin into the circulation; it, in fact, causes the conjunctiva to react locally exactly as a latent tubercular focus would react. The change in the conjunctiva, moreover, is not evanescent: in Case II it yielded a reaction twenty-one days after the instillation. Whether this persistency of conjunctival irritability occurs only in the tubercular subject, or is also met with in the non-tubercular, can be settled only by future experience. Meanwhile, those who use this test should bear in mind that it may not be quite so harmless or so bland as it is said to be.

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## THE DIAGNOSIS AND TREATMENT OF APPENDICITIS.<sup>1</sup>

By A. ERNEST MAYLARD, M.B., B.S. LOND.,  
Surgeon to the Victoria Infirmary, Glasgow.

IN fulfilling the request of the Council of the Society to initiate a discussion on the subject of appendicitis, I feel a certain degree of responsibility from the fact that, as this is the first of a series of debates which is to occupy the attention of members during the coming session, I should be naturally expected, as your official head, to set a fitting example to those who follow of the nature and extent of the limitations proposed by the Council to be exercised in the course of the various discussions.

For myself I cannot say that I feel particularly happy under the restrictions which entail my condensing, within the comparatively short period of twenty minutes, all that is, or, perhaps, ought to be said, on the subject of the diagnosis and treatment of appendicitis. After all, however, there is wisdom in the limitations proposed, because they render it imperative upon the reader of the paper to confine his attention to the more salient features of his subject; in other words, to make his remarks as essentially practical and pointed as possible, and to avoid those excursions into the realms of literature and mazes of hypothesis which, interesting and instructive enough

<sup>1</sup> A short paper read at the Southern Medical Society on 14th November, 1907, to open a discussion upon the subject.

from certain points of view, are often very wearisome on occasions such as this, and of very little help to the busy practitioner.

I am limited by the title of the debate to the *diagnosis* and *treatment* of the disease. But if this limitation is a little more closely regarded, it will be found that it is impossible to discuss diagnosis without considering symptoms; and that treatment has no rational basis apart from some knowledge of prognosis and pathology. However, the intents of the proposed discussion are sufficiently clear, and I shall endeavour to keep within those limits that will contain most of what is of the greatest possible practical value.

In looking over my notes of appendicitis, I find that I have seen 61 cases in private practice, and that 241 cases have been admitted into my surgical wards at the Victoria Infirmary, making in all a total of 302. As numbers go nowadays there is nothing out of the way in such a record, but the experience which the list affords may justify me in venturing to put before you certain opinions and conclusions which otherwise I could hardly have felt warranted in doing.

I will not trouble you with any further introductory remarks, but plunge at once into my subject. First, then, as to diagnosis. I wish I could indicate a pathognomonic symptom. Unfortunately there is not a single symptom that an appendicular attack may manifest which may not be simulated by some other affection. Diagnosis is really differential rather than direct; and it is only by weighing carefully all the possible causes of any given symptom that we may be able to arrive, sometimes only by the negative method of exclusion, at the real nature of the complaint.

Pain is pre-eminently the first symptom to consider, and it presents the utmost variations in character, intensity, and position. I am convinced of one fact, that pain, in all its varied phases, is largely determined by the position of the appendix—that is to say, whether it is placed more or less free in the abdominal or pelvic cavity, or whether it is situated behind the bowel. Thus, when an inflamed appendix occupies a tolerably free position in the peritoneal cavity, immediately the inflammation attacks the peritoneum, or, worse still, when a perforation of the organ takes place, the acutest form of pain is felt located mostly in the epigastric or umbilical region; the pain is often of the excruciating, prostrating kind. To follow this pain on its course, it subsides more or less at its original seat in usually a few hours, and may then, in non-perforated cases, become located in the right iliac region. In cases where

neither tuberculosis nor malignant disease need be entertained, the diagnosis becomes pretty clear; and even when our diagnosis is based solely on the score of probabilities, we shall be right in nineteen cases out of twenty.

The patient's sense of pain may, however, be different from that elicited by palpation of the abdomen. The acute epigastric pain is reflex, and pressure on that spot at the initial stage of the disease may not itself cause pain. On the other hand, pressure in the right iliac fossa, will certainly elicit tenderness from direct impact upon the inflamed area. If perforation has been the cause of the acute epigastric or umbilical seizure, then we may expect, sooner or later, a more diffuse distribution of the pain over the abdomen, with tenderness of pressure at any part. But here let me introduce a warning. It is that you may have general abdominal tenderness to palpation and not perforation. What this tenderness is due to I do not know, nor have I seen it explained. Certain, however, it is that it soon disappears, and portends nothing of a serious nature. The true gravity of generalised pain, and tenderness due to perforative peritonitis, is represented by a rising pulse-rate, a somewhat pale ashen-like appearance of the skin, a listless expression, and not infrequently a normal or subnormal temperature. Whenever this combination of symptoms is met with, whether at an early or a comparatively late stage of the initial seizure, it indicates toxæmia of a very grave character, and renders immediate operation imperative.

To return, however, to the subject of pain. Apart from the very acute seizures, which seem to be those alone which give rise to the reflex pain in the epigastric and umbilical regions, there are pains often of an indefinite character located in the right iliac fossa or right lumbar region. There is absolutely nothing distinctive about these pains, and it is often mere conjecture to assign them to a diseased appendix. When, however, with the pain other physical signs exist in the regions, such as tenderness, rigidity, or fulness, we may feel convinced of mischief situated in the cæcal region; and it will then only be by a careful exclusion of other possibilities, such as carcimona, tuberculosis, kidney, tumours, &c., that we shall be able to entertain, with any reasonable degree of certainty, disease of the appendix. When the pain is situated entirely in the right lumbar region, its true significance is liable to be overlooked. I have on several occasions diagnosed a retro-cæcal appendicitis by taking due account of this situation of the pain and tenderness.

It must be remembered that "M'Burney's point," and more

generally the right iliac region, is by no means the position in which pain *must* be felt in order to make a diagnosis of appendicitis. Not only may the pain be situated in the right lumbar region, but it may actually be reflected to the left iliac fossa, and be complained of there. It will, however, lead me far beyond the limits of my time if I venture to follow the vagaries of appendicular pain in all its manifestations; and I must, therefore, leave out of consideration those symptoms which may arise when, for instance, the appendix is directed downwards into the pelvic cavity, or situated elsewhere than in its normal position. Let me now turn from the symptom of pain, and say a word or two about other manifestations of the disease.

Vomiting is a too erratic symptom to be of any practical value. It only occasionally appears at the initial seizure, and then fails to suggest any particular character of the lesion directly causing it.

The condition of the pulse and temperature rank among the most important in guiding us to the future progress of the case. Their diagnostic value centres more in the after-affects than in those which result from the immediate seizure. For the first 36 or 48 hours temperature and pulse alike may rise, and the best indication that the attack is about to subside is a gradual fall of both from this period, or even earlier, onwards. If, however, there should be a continued elevation, then we may begin to feel some anxiety regarding the future progress of the case.

We may say, practically, there are three grave possibilities in a case that does not show improvement after 36 or 48 hours. These are, formation of an abscess, peritonitis, and toxæmia, the result usually of a gangrenous appendix. We may expect abscess if the temperature remains up, the pulse-rate only increased in proportion to the temperature, and an increase of swelling and tenderness in the appendicular region. In the second instance, there will be an increase in the rate of the pulse, which may also be wanting in tone, and the temperature may be raised, although it is often normal, or even sub-normal—the last being possibly the most significant. There will also be other symptoms suggestive of peritonitis. Toxæmia results usually in a similar increase in the rate of the pulse, and its tone is materially affected by the depressive action of the poisoned blood upon the heart. Bad cases of gangrenous appendix present very typical features of toxæmia.

Much has been said, at various times, about the supposed merits of leucocytosis, both as a means of diagnosing the disease,

and as an aid for the detection of suppuration. I have had no experience of this method of investigation ; but, judging from the work of others, it does not seem to be of any certain value.

I now propose to deal with the second portion of my subject—that of treatment. Prevention is better than cure ; but I intend to deal first with curative measures, and, finally, say a few words about the possibility of preventing appendicitis.

For clinical purposes it is necessary to divide cases into those which commence with acute symptoms, and those whose onset is sub-acute. Confronted with a patient who has been seized with more or less agonising epigastric or umbilical pain, I unhesitatingly assert that our first duty is to give relief. I know of but one agent that will effect such an end, and that is morphia. You know how it used to be said, and, indeed, is maintained by some now, that opium in no shape or form should be administered for fear of masking grave symptoms. But our present knowledge of the gravity of such an initial seizure, and all that it possibly portends, no longer allows of our being blinded by the employment of any temporary measure, for we are, or should be, as keenly alive to what may be in process as if no means had been taken to give relief. We administer our sedative to relieve pain, and not in any sense with the idea of effecting a cure.

Assuming, then, that we have assuaged our patient's immediate suffering, what course should we next pursue ? Remember, we are acting on the belief that the case is one of acute appendicitis. Some form of local application will next engage our attention, and here it would seem that one of two extreme courses may be followed with equally good result. We may apply heat or cold to the appendicular region. Some have advocated ice, and maintained that thereby they have relieved local pain, and checked to some extent the inflammatory progress of the disease. I must, however, express my own predilection for heat, and I believe nothing is so comforting as the old-fashioned linseed meal poultice. Septic as such an application necessarily is from a surgical standpoint, the softening of the surface skin which it causes really enables the preparatory cleansing of the part to be more effectually carried out should operation be subsequently required.

We may now assume that we have eased our patient's sufferings, both locally and generally ; what next ? My own answer and course is to obtain a free evacuation of the bowels as soon as possible. I advocated this method of treatment some years ago (in 1899) in a paper which I wrote entitled

“Treatment in the Early Stages of Acute Appendicitis by Saline Aperients.” From that time to this I have never seen any reason to depart from that practice. Pathologically, I know of no condition in the disease which could, or would, be deleteriously influenced by obtaining a free evacuation of the bowels. On the other hand, a copious depletion of the part by active secretion or excretion is, I believe, in strict accordance with the best practices in all cases of congestion and inflammation wheresoever such processes may be in action. It is a standing rule in my wards that a patient be given hourly drachm doses of sulphate of magnesia until the bowels move freely. It not infrequently happens that eight doses will have to be administered before any action takes place. Others are in the habit of giving one large dose of calomel or castor oil. My preference for Mag. Sulp. lies in the fact that it causes a more watery evacuation. When given with a little mineral acid and some syrup of lemons it can usually be taken without causing sickness.

If, after this line of treatment has been carried out, our patient does not show manifest signs of improvement, and it is not difficult in most cases to be confident that such improvement is taking place, we may begin to have some cause for anxiety. The best signs of improvement are, not so much a lessening of the pain, both locally and generally, but a lowering of the pulse-rate, and possibly also of the temperature. The patient looks more restful, inclined to sleep, and has a more healthy appearance about the face.

If, on the other hand, the pulse, instead of falling, continues high, or even rises higher, the patient's facial expression and colour look bad, his tongue furred or dry, his nervous system generally dulled—if, I say, these symptoms exist in the face of a diminution of pain, or of a lessening of the temperature, we may take it that the sooner the patient is operated on the better. For such adverse symptoms indicate toxæmia, and may be due to a gangrenous appendix, or a slowly advancing suppurative peritonitis. To push purely therapeutical measures, and thereby exercise delay in the face of such grave omens, is to neglect the only means that would, in the great majority of cases, save life. My feeling is that 36 to 48 hours exhausts all measures of a purely medical character, and whenever further treatment is required it is essentially surgical. For, supposing there is not a series of symptoms as serious as those just narrated, we may still have a continuation of a temperature with increasing local discomfort in the appendicular region, indicating that



there is not such a complete subsidence of the condition as we should be led to expect if complete and uninterrupted recovery is to take place. The full significance of these symptoms is the probable formation of an abscess. Our past experience of the trouble abscesses of this nature may cause, renders it advisable to let out the pus at as early a stage as possible.

My allotted time is fast expiring, so that I must condense my remaining remarks in as few words as possible.

Mild attacks of appendicitis may be successfully overcome by a proper regulation of the bowels and a judicious attention to diets; but when attacks are recurrent, there are, as a rule, other conditions present which render it advisable to have the organ removed. Over and over again, we find, in these recurrent cases, a constricted or obliterated condition of some part of the appendicular canal damming back the secretion in the distal portion of the viscus, or the same effect is frequently the result of a sharp kink in the organ. Each repeated attack of inflammation in these cases means the formations of additional adhesions to neighbouring parts of the bowel, if not also the subsequent formation of the abscess, and other grave conditions of the nature of intestinal obstruction. Let me conclude with a few observations on preventative treatment.

I do not think there can be any doubt in the opinion held by many, that the disease which sometimes constitutes an appendicular attack has its origin, not primarily in the viscus itself, but in the cæcum—in other words, that it is merely an extension of an affection which already actively exists in the large bowel. Now, of all parts of the intestinal canal, probably no region is more liable to irritation, either of a temporary or chronic nature, than the cæcum. It is here that fæces linger longest; and it is here, therefore, that anything of an irritant nature contained within the excreta might be expected to exercise its most injurious effects. It is not difficult to understand how any inflammation of the bowel in this region will easily extend up the canal of a patent appendix, and excite changes there of a character sufficient to cause symptoms referable to the organ itself. I cannot refrain from briefly referring to a case, upon which I operated only three weeks ago, that seems to illustrate in a very striking way this particular sequence of events. The patient was a woman, 65 years of age, and old-looking at that. She had had recurring attacks of supposed appendicitis. I removed a short, thickened, and patent appendix, which was very intimately attached to the cæcum and ileum. There was so much

thickening of the neighbouring bowel that I was tempted to open the colon close to the base of the appendix, and examine the condition of the parts, for, considering the age and appearance of the patient, the question of malignancy was a reasonable one to entertain. I detected nothing but what appeared to be of an inflammatory character. What, however, the inspection revealed was a very marked congestion and injection of the mucous membrane of the cæcum around the orifice of the appendix, and the extension of this same appearance for a short distance up the entirely patent canal of the latter. The inference I deduced was that the attacks of appendicitis were due to recurrent inflammatory lesions in the large bowel, which had secondarily involved the appendix.

I cannot discuss further the possible pathological changes in the cæcum which may lead to permanent organic mischief in the appendix, but I have said sufficient, I think, to indicate that there may exist causes which lie within our power to prevent, and which are worthy of very serious consideration. To express some of these considerations in the briefest possible way, there can be no doubt that chronic constipation is a condition which ought to be properly combated in every instance and under all circumstances. And, further, while it is probably impossible to fix upon any particular food as a predisposing cause, we may reasonably consider that diet is not a matter to be lightly regarded in those who suffer from chronic constipation, or who are conscious of an intestinal susceptibility to certain injesta.

I have no time to discuss further such practical questions as concern the advisability of simply opening an appendicular abscess, with or without any attempt to remove the appendix at the same time, and other details connected with the operation of appendicectomy. I shall now merely conclude by tabulating the conditions which, in my opinion, call for operation:—

1. Operation is imperative and immediate so soon as it is believed that the symptoms indicate perforation into the general peritoneal cavity.
2. Operation is also imperative without delay when, at the expiration of 48 hours, there are wanting evident signs of improvement.
3. The operation of appendicectomy is *advisable* at the end of a week in all cases of acute appendicitis which have taken even the most favourable course.
4. Appendicectomy should be performed in all cases of sub-acute recurrent attacks of appendicitis.

I would only remark in regard to No. 3 that, as a surgeon, I am compelled to advise appendicectomy, although immediate appearances suggest complete recovery. And the advice rests on these two reasons:—First, that at this particular period of the illness the operation is exceptionally easy and safe; and, second, that it removes all possibilities of future complications, which it is otherwise, humanly speaking, impossible to say may not arise at some future period.

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## DIAGNOSIS AND TREATMENT OF DISEASES OF THE TEAR PASSAGES.<sup>1</sup>

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MY reason for choosing diseases of the tear passages for a post-graduate lecture is two-fold—firstly, because they are of very frequent occurrence, and their treatment is at times both troublesome and protracted; and, secondly, because of recent years the methods of treatment I employ are quite different from those used in the earlier years of my practice. Much of what I am about to say was published in the *Edinburgh Medical Journal* for July, 1895. The length of time which has elapsed since then has enabled me to criticise and correct my own article, and to add to it the results of larger experience.

Before, however, proceeding to investigate the causes, and to describe the methods to be employed for the cure or relief of diseases of the tear passages, it may be well to recur briefly to the anatomy and physiology of the lachrymal apparatus, a clear conception of which is absolutely necessary for a right understanding of the principles underlying the pathology and treatment. The tears, coming from the lachrymal gland and mixed with secretions from the conjunctival glands, flow over the surface of the eyeball towards the inner canthus, where they collect in the hollow of the *lacus lachrymalis*. On its outer side this space is limited by the *plica semilunaris*, while

<sup>1</sup> A post-graduate lecture delivered at the Glasgow Ophthalmic Institution on 3rd September, 1907.

its other boundaries are formed by that part of the palpebral fissure which completes the internal angle of the eye. Situated in this little lake is the caruncula, a spongy-looking piece of mucous membrane, yellowish-pink in colour, containing several small glands, and studded with hairs so delicate that they can hardly be seen by the naked eye. Just at that point on the margin of both upper and lower eyelids where their direction changes, and their clean-cut, flattened edge becomes rounded, there is a little papilla, the apex of which is turned towards the eyeball, and is seen, when the lid is pulled slightly outwards, to be perforated by a small orifice—the *punctum lachrymale*. The superior one is smaller than the inferior, and is so placed that when the eyelids are closed the puncta are not opposite, but lie side by side, the lower being external to the upper. The *puncta lachrymalia* lead into two minute ducts called the canaliculi, each of which, after passing vertically into the eyelid for a very short distance, changes its direction, the lower turning horizontally inwards and the upper obliquely downwards. Just behind the bifurcation of the tendo-oculi the two canals usually unite to form a short tube, which opens into the lachrymal sac about the junction of its upper fourth with the lower three-fourths. Each canaliculus is narrowest at the punctum, but immediately within the orifice the tube widens, and at the bend where it turns inward there is a well-marked enlargement, beyond which the calibre of the ducts gradually diminishes till they unite shortly before entering the sac. This last is lodged in the groove formed by the lachrymal bone and the ascending process of the superior maxillary, and lies immediately behind the internal palpebral ligament. Above this it rises as a dome-shaped *cul-de-sac*, while below it is continuous with the nasal duct, the two structures forming in reality one canal uniting the eye with the nose.

The nasal duct is a nearly cylindrical tube which passes downward, outward, and backward, to terminate in the inferior meatus of the nose by means of a slit or a rounded opening situated about 8 or 10 millimetres behind the anterior extremity of the inferior turbinated bone. It lies in an osseous groove formed by the superior maxilla, the lachrymal, and the inferior turbinated bones. Its walls are lined by a cavernous tissue continuous with that of the lower meatus, and over this is a layer of mucous membrane covered by ciliated epithelium. Certain transverse folds of the lining membrane—occurring at the inferior orifice of the duct,

at the inner opening of the canaliculi, at the junction of the sac with the nasal duct, and about the middle of the duct itself—have been considered to be valvular in function, but there is little evidence in favour of such a theory, except in the case of that first mentioned. The size and shape of the lachrymo-nasal canal are always modified by the age of the individual and the cast of the features (more especially the formation of the nose), but on an average the length is about 24 mm., the antero-posterior diameter when the sac is distended about 6 mm., and the transverse about 4 mm. The nasal duct has a diameter of about 3 mm., except at the upper extremity, where it is narrower.

The *orbicularis palpebrarum*, which has a very close relation to the canaliculi and the lachrymal sac, is divided into an orbital and a palpebral portion. Of these the latter alone acts in ordinary closing of the eyes, such as winking, while the former comes into play when the eyes are closed with some force. Arising from the crest on the lachrymal bone is a small, well-defined bundle of muscular fibres—the *tensor-tarsi*, or Horner's muscle—which, after emerging from under cover of the sac, divides into two slips, the one distributing itself round the upper and the other round the lower canaliculus. The precise action of the mechanism for the conveyance of the tears from the conjunctival sac into the lachrymal passages is not yet altogether understood, but it is certain that perfect closure of the lids is an indispensable condition. When the *orbicularis* contracts, the eyelids close, and the mouths of the canaliculi dip into the *lacus lachrymalis* and suck up the tears by capillary attraction. Further, when the muscle is contracted, it pulls upon the internal palpebral ligament, and consequently upon the anterior wall of the sac, which thus becomes dilated. When the eyelids open again the deep part of the palpebral muscle (*tensor-tarsi*) contracts, the sac and the canaliculi are compressed, and the tears, aided by their own weight, are forced downward into the nasal duct. This muscular act is helped by the natural elasticity of the parts, and by aspiration due to the diminished amount of air in the nasal cavities during inspiration. The secretion from the meibomian glands anoints the edges of the eyelids, and in ordinary circumstances prevents the overflow of the tears; and it is only when the lachrymal secretion is excessive, through over-stimulation of the gland or alteration in the position of the puncta (as in laughing, coughing, vomiting, &c.), that the excretory channels become inadequate, and tears overflow on to the cheeks.

"Watery eye" is the pathognomonic sign of every disorder of the lachrymal apparatus. Under normal conditions there is a balance between the secretion of tears and their outflow by the natural channels; but when people suffer from "watery eye" there is either excessive secretion or some obstruction in the tear passages. Over-secretion usually affects both eyes, whereas blocking of the lachrymal ducts is, as a rule, unilateral. The chief causes of over-secretion are emotion, some reflex disturbance (for example neuralgia), a foreign body on the conjunctiva or cornea, or some affection of the nose or teeth. In such cases any exposure to wind or light stimulates secretion so greatly that tears are continually gathering on the edge of the lower eyelid, and this, of course, takes place all the more readily, when there is any congenital narrowness of the lachrymal passages—as when the bridge of the nose is flat and depressed, or when the features are very sharp. In other cases persistent "watery eye" seems to be due to some optical defect, and then lachrymation is always greatest after reading or writing.

By far the most common cause, however, is either some displacement of the puncta, or some obstruction in the canaliculi. In all injuries involving the inner canthus—*e.g.*, wounds, burns, &c., the puncta, the canaliculi, and even the lachrymal sac are very liable to be implicated, and after cicatrisation their function may be found to have been very seriously interfered with. In dealing with any such case it is, therefore, necessary, from the very outset, to pay special attention to the condition of the tear-passages, and to take every available means to ensure that their permeability is maintained. The inferior canaliculus is the larger, and plays the more important part in excretion, so that when its punctum is displaced much lachrymation follows, even though the orifice of the superior duct is in accurate apposition to the eyeball. Displacement of the puncta may arise from want of tone in the fibres of the *orbicularis palpebrarum*, a condition frequently seen in the aged, the result of the shrinking of the tissues from senile atrophy; or, it may occur in paralysis of the facial nerve. Eversion of the eyelids may take place from many different causes, and the ectropion thus produced turns the puncta outwards, and withdraws the mouth of the canaliculus from the *lucus lachrymalis*, with the result that the conjunctival surface may become cuticular. Should the lids be inverted in consequence of burns, wounds, granular conjunctivitis, &c., the puncta are again in a faulty position, and the tears collect at the caruncle and trickle over on to the cheek. A similar result may be brought about by the separation of the lid from

the eyeball through chronic thickening of the conjunctiva, enlarged caruncle, or polypoid or other tumour of the conjunctiva situated near the inner canthus. The puncta are occasionally congenitally absent, or they may be obliterated from disease of or injury to the eyelids. It rarely, however, happens that both upper and lower are destroyed, the latter being generally the one that is closed. Inflammatory swelling of the lining membrane of the canaliculi may become so pronounced as to obstruct the excretion of the tears, or a foreign body—*e.g.*, an eyelash—may find its way into a canaliculus, most frequently the upper, and not only form a complete barrier to any outflow, but also set up considerable inflammation. The canaliculi may also be obstructed by the formation of calculous deposits in their interior.

The excess of tears renders vision indistinct, the constant wiping of the eyes produces considerable irritation, and a certain amount of conjunctivitis develops. The watering and inflammation always increase with exposure to cold winds, but, as a rule, pass off when the weather becomes warm. An examination of the nose should always be made in such cases, for in nearly every one the nasal mucous membrane will be found to be involved. The nostril on the affected side may be dry and slightly inflamed, or there may be a swollen and oedematous condition of the spongy tissue converging the inferior turbinated bone; and as the disease travels towards the eye, the lining membrane of the lachrymal duct becomes swollen, and the calibre of the passage contracted. When the upper eyelid is everted, the retro-tarsal fold of conjunctiva may be found hypertrophied, and there is hypersecretion of mucus from the Krause's glands which it contains.

Certain cases, which present a well-defined clinical picture, have been grouped under the name of "lachrymal catarrh." There is a history of "cold in the head," which had been present for a longer or shorter time before the eye-symptoms showed themselves. Then, after some exposure to cold, more especially when the patient has been heated, there is a sensation as if a foreign body had entered the conjunctival sac, and an itchy feeling in the eyelids is followed by a burning sensation. The lids become slightly swollen and are of a dusky red colour, and their edges may be ulcerated. There is excessive lachrymation, and after a time a slight mucous discharge, which is seen adhering to the roots of the eyelashes, and which may be so abundant as to glue the lids together during sleep. The conjunctiva is injected, and the caruncle and semilunar

fold are swollen. When the eyelid is pulled outward the lachrymal papilla is seen to be enlarged, and the punctum is dilated and patulous—very characteristic symptoms. Pressure over the tear sac usually causes a slight regurgitation of clear watery fluid through the lower canaliculus. There may be slight spasmodic closure of the eyelids and inability to look at the light. If the patient be exposed to cold or damp, such symptoms may persist for a long time, the discomfort being some days greater, other days less, but never entirely gone, and always aggravated by the necessarily constant use of the handkerchief, or by the rubbing of the eyelids to try to obtain relief from the intolerable itching. The swelling of the conjunctiva also tends to separate the punctum from the eyeball, and, if the disease be not controlled by treatment, a vicious circle is developed, whereby the disease is perpetuated.

After a "watery eye" has persisted for a time, it may have been for months or even years, a slight swelling is observed at the inner canthus, over the region of the lachrymal sac. This, at first insignificant, becomes more and more conspicuous as the disease progresses. It is painless, and the skin (which is at the outset of a natural colour, but may subsequently become inflamed) glides freely over it. When the tumour is pressed upon, its contents pass downwards into the nasal duct, and the swelling disappears. In a few hours, however, there is a return to the former condition; a fresh accumulation of tears has formed, and by-and-by this, mixed with the catarrhal discharge, produces irritation, which at length passes into inflammation of the wall of the sac. As the tumour grows larger, a point is reached when, the nasal duct having become blocked, the contents can no longer be pressed downwards into the nose, but regurgitate through the puncta and overflow the eye. The discharge usually consists at first of glairy mucus, like white of egg, streaked with pus; but this after a time becomes turbid and more distinctly purulent. The name *blennorrhœa*, however, which is often applied to this form of disease, implies, not that there is a specific inflammation analogous to *blennorrhœa* of the conjunctiva, but only that the secretion contains pus. Under the microscope the discharge is seen to swarm with micro-organisms of many kinds, and it is so virulently infective that when it comes into contact with an abrasion of the cornea purulent infiltration speedily occurs. When it comes into contact with an operation wound most disastrous results follow. In many cases operated on for cataract the eye has been lost through suppuration arising from



a blennorrhœa, and to operate when the tear passages are not permeable is simply to court defeat. The discharge irritates the conjunctiva, which becomes more or less inflamed; ophthalmia tarsi frequently co-exists, and the caruncle and semilunar fold are red and swollen. Whenever one eye alone is thus affected suspicion ought at once to fall upon the lachrymal passages as the cause of the evil.

As the tumour becomes still larger, pressing fails to empty it, as the canaliculi are now blocked as well as the nasal duct. The walls of the sac become relaxed and thinned from the pressure of the accumulating discharge; and a swelling of a bluish-grey colour, of a size varying from that of a horse-bean to that of a walnut, fluctuant, and grooved on its anterior surface by the internal palpebral ligament, forms at the inner canthus. This is called a mucocele, and is usually painless, but may produce much disfigurement. It causes constant lachrymation, and patients often complain of dryness of the nostrils on the same side. When catarrh of the tear sac has existed for a long time, periostitis, followed by caries of the lachrymal bone, always occurs; so that when the probe is passed along the canaliculi it strikes against bare bone.

Blennorrhœa of the lachrymal sac is more frequent among women than men, and more especially in those who, like washerwomen, are exposed to considerable alternations of heat and cold. It is also more likely to occur in those whose systems are low, and that is probably why diseases of the tear passages are so common among women who are nursing children. In some cases it is clearly connected with syphilis or tubercle; and in such, caries of the bones surrounding the nasal duct always occurs at an early stage of the disease. When it is met with in infants, as it sometimes is, it is due to a congenital narrowness of the nasal duct, and passes off, as a rule, spontaneously as soon as the tear passages become fully developed.

In most instances acute inflammation of the tear sac appears as a complication in the course of a chronic catarrh, and comes on as a result of exposure to cold. It may, however, also occur after any injury in the neighbourhood of the sac, in the course of affections of the nasal mucous membrane—especially in subjects whose health has broken down, more particularly in those who suffer from syphilitic diseases of the nose—or after measles and scarlatina. Occasionally infants are born with dacryocystitis, or it comes on within a few weeks of their birth. The onset of the disease is usually marked by shivering and rise of temperature, and there is intense pain in the region of

the sac, where the skin becomes red and cedematous. Between the root of the nose and the inner canthus a swelling appears, at first well defined, and so painful that the patient shrinks the moment it is touched. Very soon, however, as the surrounding tissues become involved, it gets more diffuse and extends to the lids and cheeks. The symptoms of local inflammation are sometimes so severe that the disease has been mistaken for erysipelas, and this error may all the more readily occur when the initial feverishness is great. As the size of the swelling increases, the skin assumes a more angry red and becomes glistening from the tension to which it is subjected. The tumour, at first firmly elastic and resistant, now becomes fluctuant, and at a point below the internal palpebral ligament a yellowish spot appears, over which, if no operation is performed, the skin gives way, and the purulent contents of the sac escape. Immediately after the abscess has opened great relief is felt by the patient, and if the opening in the skin be large enough to permit of the free escape of pus, the swelling and redness soon subside; and if the nasal duct be permeable the opening will close and the cure be complete. It often happens, however, that the opening into the abscess cavity remains, and tears and muco-pus continue for a long time to escape through the fistula thus formed. In cases which have been long neglected, especially in scrofulous and syphilitic subjects, the surrounding tissues become inflamed, the adjacent bones become carious, and inflammatory swelling and sprouting granulations appear round the fistula. In a few rare cases the abscess does not burst externally, but perforates the lachrymal bone, and its contents escape into the nose.

As has been said, acute dacryocystitis may be mistaken for erysipelas, but, as a rule, the diagnosis is not difficult, as in the former the general febrile disturbance is not so high, the redness and swelling of the skin rarely pass over the nose to the opposite side of the face, and quite pathognomonic is the presence at the inner canthus of a well-defined tumour, excessively tender to the touch. The disease may also be confounded with abscess at the root of the canine tooth, but here the internal canthus will be free from tenderness and circumscribed swelling, while palpation of the canine fossa by the mouth will detect a swelling there. In hordeolum, or ordinary "stye," the swelling of the eyelids and the parts around may be very great, but palpation will show that the tender spot is not over the tear sac, but at a point on the margin of the eyelids, where, in a day or two, a suppuration will form and burst. In the accurate diagnosis of all tumours, abscesses of the skin, boils, &c., in the

neighbourhood of the sac, and likely to be mistaken for inflammation of it, the absence of a history of previous "watery eye" is of the first importance.

*Treatment.*—The treatment of these conditions varies according to the stage of the disease when the patient comes under observation.

1. *Simple lachrymation.*—The cause having been determined, the principles of treatment suggest themselves naturally. Careful examination ought to be made of the teeth, eyes, and nose, and any defects remedied. It is most important to correct any error of refraction with suitable spectacles, and any hypertrophy or inflammation of the nasal mucous membrane must be treated. If there be simply congestion of the erectile tissue over the inferior turbinate bone, much relief will be given by painting the nostrils with a solution of cocaine and menthol, or by causing the patient to inhale carbolic and menthol smelling salts. If the lower punctum be contracted, it ought to be carefully enlarged by means of a conical dilator; and if the lachrymation persist, a 2 per cent solution of cocaine in adrenalin (1 in 1,000) should be slowly injected along the canaliculus into the lachrymal sac. If there be no obstruction, the fluid will at once pass into the nose; if, however, the lining membrane of the nasal duct be swollen from congestion, the passage of the fluid will be delayed until the adrenalin has had time to constrict the vessels and render the canal pervious. It must be remembered that the use of adrenalin in this way is occasionally followed by acute coryza, which, however, is usually very transient.

2. *Lachrymal catarrh.*—Astringent lotions, or astringents combined with alkalies, diminish secretion and subdue conjunctival inflammation; and dusting the eyelids with calomel, well dried and finely powdered, often gives marked relief to the sensation of itching and burning heat. Brushing the palpebral conjunctiva with a solution of nitrate of silver (from 2 to 4 per cent according to the amount of the discharge), or pencilling the lids with a crayon of alum, of sulphate of copper, or even of solid caustic, often aids very materially in restoring the puncta to their natural position, and permitting them to resume their proper excretory function. When, however, the eversion of the lids is too great to be overcome by such simple means, it is necessary to slit up the canaliculus as far as the lachrymal sac, and so convert the duct into a little gutter along which the tears may escape. This operation is best performed by means of the small probe-pointed knife devised by Weber. The eyelid having been pulled outwards, so as to keep it on the

stretch, the blade is introduced into the canaliculus and pushed horizontally inwards until its point is felt to strike against the lachrymal bone. The cutting edge ought to be inclined backwards and upwards, and the incision of the canaliculus is completed by simply raising the handle of the knife. For two or three days the lips of the wound must be kept from adhering by passing a probe along their edges. Sometimes the punctum is partially occluded, or there may be an obstruction in the canaliculi, most frequently just where they unite, or at the point where they enter the sac. Such obstacles must be overcome by the use of small probes, but the employment of these has to be managed with considerable nicety of touch, as, if a false passage be made in the mucous membrane lining the duct, the subsequent cicatrization will still further obliterate the channel, and matters will be worse than they were at the beginning. The natural drainage of the tears having been established, the progress of the case ought to be quite satisfactory, and in most instances nothing more requires to be done. Any defects in the eyes or nose must be remedied, as advised for cases of simple lachrymation, and the local treatment is greatly assisted by the use of alkaline salines given internally.

3. *Catarrh of the lachrymal sac and stricture of the nasal duct.*—In the milder cases all that is necessary is to keep the sac empty by pressing on it with the tip of the little finger; and the patient often acquires such dexterity in this that he can do it much more thoroughly than anyone else can. In addition, the sac and nasal duct ought to be washed out by alkaline antiseptic solutions; and for ordinary purposes nothing answers better than the nasal tabloids with carbolic acid prepared by Burroughs Wellcome & Co. One or two tabloids, each containing 5 grains of boracic acid, 5 grains of borax, and half a grain of carbolic acid, are dissolved in a wineglassful of tepid water, and the solution injected into the sac by means of a small syringe. If the duct be free from obstruction the fluid passes into the inferior meatus, and, if the patient inclines his head forwards, flows out of the nostril. These injections ought to be repeated every day, or every second day. The nasal mucous membrane will also require attention, and a similar solution may be sniffed up the nostrils or sent through by means of a syphon douche. After the membrane has been thoroughly cleansed, an ointment ought to be applied to its surface. Menthol and cocaine always afford much relief, from their power of contracting the blood-vessels, and so reducing the congestion of the erectile tissue which covers the inferior turbinated bones; and when such

drugs are combined with iodoform, aristol, carbolic acid, &c., the surface soon becomes much healthier. A solution of menthol and iodoform in paroleine or saxol may also be used with a spray atomiser, and this has a certain advantage over ointments, in so far that the medicated spray reaches every part of the nasal mucous membrane.

When, however, the contents of the sac cannot be pressed downwards into the nose, and when fluids injected by the syringe will not pass onwards, but regurgitate through the canaliculi, means must be taken to re-establish the permeability of the lachrymal passages. When the obstruction is due to simple inflammatory thickening of the mucous membrane, this may be effected by the passage of small probes through the puncta and canaliculi, and down the sac and duct, into the nostril. Bowman's probes are those most generally used. It is, however, an advantage to have a handle attached, and Messrs. Archibald Young & Son, Edinburgh, some years ago made for me a set of probes which are so fitted. They are six in number, made of silver, with finely tapered bulbous points, and are sufficiently flexible to permit of their being bent into any required shape, while at the same time they are sufficiently resistant to overcome a moderate stricture without yielding before it. They are contained in a cylindrical case, the stopper of which is fixed by a bayonet joint. This stopper, when removed, serves as a handle, its inner extremity forming a mount into which the probe to be employed is screwed. The finest of the set (No. 1) corresponds to 23, and the largest (No. 6) to 15, on the wire guage, the others being intermediate. Some surgeons make a practice of introducing a probe by the superior canaliculus; but, on the whole, it is more convenient and easier to utilise the inferior. The introduction is effected in the following manner:—The lower eyelid is pulled outwards by the forefinger of the left hand, while with the right the probe, previously bent so as to present a concavity forward (this makes its subsequent passage into the duct easier), is pushed into the punctum, at first perpendicularly, and then, the handle being depressed, is pressed horizontally along the canaliculus until it enters the sac and is stopped by the bone at the inner wall. The direction of the probe must now be completely changed, in order to reach the nasal duct. While the point is kept firm against the inner wall the handle is raised until it assumes a vertical position. The finger of the left hand ought then to be removed from the lower lid, and with the thumb or forefinger the skin of the forehead should be raised and made

tense, the passage of the probe into the entrance of the duct being thus facilitated. The probe ought now to be pushed gently but steadily downwards, backwards, and a little outwards, following the direction of the duct, until it reaches the nose. Great care must be taken not to tear the mucous membrane and form a false passage; and while firm pressure is often needed to overcome a stricture, anything approaching to violence must be avoided. If the right course has been taken, the handle will rest against the upper and inner margin of the orbit, and will point in a line which, passing through the centre of the internal palpebral ligament, is directed downwards towards the canine tooth of the same side. Any marked deviation from this position implies that a false passage has been made, and the probe ought to be at once withdrawn and no further attempts at probing made until the laceration has had time to heal. When the probe strikes against dead bone, and a firm stricture is also present in the duct, it is necessary to slit up the lower canaliculus, and open into the sac, according to the method first proposed by Bowman. In cases where the lower canaliculus is obstructed, the operation may be performed through the superior. A strong Weber's knife is then employed, and when its probe point rests against the inner bony wall, its handle is raised and the canaliculus slit right into the sac. The cutting edge is then turned forwards, and the anterior wall incised as freely as possible. The knife is now pushed downwards into the duct, and the stricture divided by turning the edge in every direction. It often happens that whenever the anterior wall is divided pus wells out by the side of the knife, and when much dead bone is present the discharge is usually very foetid. The sac ought, thereafter, to be freely irrigated by antiseptic and astringent solutions; but, when the disease has existed for a long time, care must be taken not to use too much force with the syringe, as the walls are thin and might give way under the pressure, and the injection fluid pass into the subcutaneous tissues. A large probe ought now to be passed along the nasal duct. Couper and Theobald recommend very large probes and claim surprisingly good results from their use, but, as Risley has shewn, the less probing lachrymal cases get, the better. What is wanted is not a duct dilated to its utmost capacity, but a channel kept permeable. When I use a large probe, I prefer the one devised by Ziegler, and as the use of all probes of this size is very painful, I think it better to have the patient under a general anæsthetic, nitrous oxide being, as a rule, sufficient.

After the probe has been passed, I invariably introduce a lead style, because that metal readily moulds itself to any irregularity in the walls of the canal. Formerly the use of styles was unsightly, as they were introduced from the outside immediately below the internal palpebral ligament; but when they are passed from the conjunctival surface, the lead can be so tapered and curved that it lies in the groove formed by the slit canaliculus, and is almost invisible. I usually remove the style in from forty-eight hours to a fortnight after the operation, but it can be worn for months without discomfort. It is better, however, for the patient to have it taken out at regular intervals, and the sac washed with an astringent lotion. Suppuration is diminished by the injection of 25 per cent argyrol solution, but the prolonged use of either argyrol or protargol may be followed by indelible staining of the conjunctiva. When the duct is closed by a bony stricture it will be necessary to perforate the lachrymal bone and so establish a passage directly into the nose.

In addition to local treatment, however, careful attention must be paid to the general health. The strength of patients thus affected is often much run down, and good food and protection from exposure to cold will do a great deal to expedite the progress of a chronic case. Tubercular cases are sometimes bilateral, and in them, as well as in those complicated by syphilis, constitutional treatment is most essential. Anything like very forcible dilatation of the lachrymal duct must here be carefully avoided, as being likely to still further damage the bony walls of the canal, which are, in all likelihood, already extensively diseased.

4. *Acute dacryocystitis*.—Acute dacryocystitis is rarely seen early enough to permit of anything being done to check its course: but when this is so, the progress may be arrested by pressing upon the sac to evacuate its contents, prescribing an evaporant lotion to diminish pain and subdue inflammation, administering a purgative, and applying leeches. As soon, however, as it is quite clear that pus has formed within the tear sac, use should be made of fomentations, and of opiates or hypodermic injections of morphia to procure relief from pain, so that the patient may obtain sleep. Whenever fluctuation can be detected, a free incision ought to be made right down into the sac, beginning about the middle of the lower border of the internal palpebral ligament, and enlarged downwards for about half an inch in order that the pus may have free exit. The passage ought then to be cleansed by gentle syringing with warm antiseptic solution, and a probe introduced through the

incision into the nasal duct, when, if this channel be successfully opened, the contents of the sac will escape into the nostril and the skin wound will close. In many cases, however, it is most satisfactory not to interfere with the canal until all signs of acute inflammation have disappeared, and then to slit the lower canaliculus, pass a large probe into the nasal duct, and introduce a style which can be worn as long as may be deemed necessary.

5. *Permanent enlargement of the lachrymal sac, with or without a fistula.*—In cases of very old standing, where the nasal duct has become obliterated, and there is extensive necrosis of bone, a permanent fistula, situated in the midst of a fungating mass of granulation tissue, remains. In other instances the walls of the sac become thickened and completely lose their elasticity; and in these, even after a free passage has been re-established, the lachrymation is very little (if at all) relieved, and an unsightly swelling remains at the inner canthus. In the treatment of all the cases previously described, the aim was to conserve and restore the function of the natural passages. In this group, on the other hand, in order to effect a cure, the natural passages must be completely obliterated.

Till recently this was accomplished by incising the sac from the outside, burning its walls with chemical caustics or by the actual cautery, packing the cavity, and permitting slow granulation. This method, which goes back to the time of Celsus, is still practised; but it has of late been replaced by complete extirpation of the sac. This is done by different surgeons in different ways, but personally I follow the method and use the "rugine" devised in 1897 by Professor Rollet of Lyons.

The operative technique which I adopt is shortly described in the following paragraphs. As the operation is apt to be tedious, on account both of the hæmorrhage and of the deep position of the sac, it is best to have the patient under a general anæsthetic, and every precaution must then be taken to prevent the escape of blood through the nasal duct into the pharynx and larynx.

An incision about half an inch in length, curved slightly outwards, is made through skin and subcutaneous tissue down to the bone, beginning at the middle of the lower border of the internal palpebral ligament, which is made more distinct by pulling the lower lid outwards. The lips of the wound are conveniently held apart by a Müller's speculum, and hæmorrhage, which, owing to the irregular distribution of the angular and palpebral branches of the facial artery and vein, is often troublesome, must be checked by seizing any bleeding point



with pressure forceps, and by controlling the general oozing by means of retractors held firmly against the upper and lower extremities of the incision. The retractors I use are modified from Axenfeldt's, which were devised for the same purpose, but which I found difficult of manipulation. A solution of adrenalin and cocaine injected ten minutes before the incision is made is undoubtedly helpful as a hæmostatic.

After the field of operation is cleared of blood, the fibrous covering of the sac (which can be readily distinguished by its colour) is cut through, and the sac itself, by means of the "rugine," carefully dissected from the lachrymal fossa, caught by forceps, and kept on the stretch, while (still by means of the rugine) it is gradually freed from its adhesions. Great care must be taken to get thoroughly over the dome, in order to accomplish which it may be necessary to enlarge the incision by dividing the internal palpebral ligament. After it has been completely cleared, the sac, still held firmly by the forceps, is cut through with curved scissors at its junction with the nasal duct (great care being taken all through not to injure the eyeball), and the orifice of the duct is thoroughly scraped with a small Volckman's spoon.

In my earlier cases I accurately approximated and sutured the skin, for, in most instances, the wound healed by first intention. As, however, at times, fluid collected in the cavity behind and proved troublesome, I now, in order to avoid any such risk, put in only one or two stitches of fine silk worm-gut about the middle of the incision, so that free drainage may take place above and below. A wet dressing of bichloride gauze is applied, and, as a rule, left for three days, by the end of which time union has generally taken place. If necessary, the scar may be protected for a few days after that with collodion. The cicatrix is small, and, if the incision be made in one of the natural furrows of the skin, it is, indeed, in a few weeks, hardly noticeable.

Sometimes, where the suppuration has been prolonged, it may be impossible to dissect the sac out, owing to the extent of the ulceration in its walls, and it has then to be removed piecemeal with a Volckman's spoon. This is not nearly so satisfactory as complete extirpation, because, should a small piece of mucous membrane be left behind (as is very apt to happen), it will continue to suppurate, and pus will accumulate at the bottom of the wound. In these cases, the skin will, as a rule, heal perfectly, but the pus finds its way, sooner or later, to the surface, usually accompanied by all the signs of acute inflammation. In order to obviate this, it is my

custom, after scraping, first to pack the cavity with gauze, then a day or two later to syringe it out with peroxide of hydrogen lotion, and thereafter to apply iodine vasogen, or naphthol and camphor, to every part of the granulating surface. The naphthol and camphor preparation (2 parts of naphthol and 3 parts of camphor) is very effective, but it must be used with great caution on account of the irritating effect on the eyeball. This can, however, in great part be prevented if, during its application, oil be freely applied to the conjunctival sac.

The immediate results of complete extirpation of the lachrymal sac are perfectly satisfactory, for the patient is freed from the disfigurement of the swollen sac, as well as from a continual source of suppurative discharge with all its attendant dangers. The remote results are, as experience has shown, equally good, because abnormal lachrymation occurs only if the eye be exposed to cold winds or other sources of irritation.

It may at first seem strange that a constant epiphora should be cured by obliteration of the tear passages; but an explanation is readily to be found in the fact that the lachrymal gland may be regarded as a reserve apparatus, and that, therefore, under normal circumstances, it secretes very little. The natural moisture on the surface of the eyeball is carried away by evaporation, and tears flow only in response to an irritant. An inflamed lachrymal sac is a constant source of irritation, and whenever it is removed the lachrymal gland ceases to secrete abnormally. Moreover, Rollet has shown by his experiments on dogs that ablation of the tear sac is followed by atrophy of the lachrymal gland, and consequently he regards gland and sac as forming part of one system and functionally interdependent.

In summing up the different lines of treatment, it may briefly be said that, without doubt, a simple epiphora, with or without a blenorrhœa of the sac, may be quite successfully treated by means of injections and occasional probing. This procedure involves, however, much time, and when there is a considerable suppuration of the sac, there must always remain doubt as to ultimate cure by such conservative means. The simpler class of cases, therefore, may need extirpation, if the patient cannot afford the time necessary for treatment, if he have a cataract requiring operation, or if he suffer from ulcer of the cornea, or be liable in his work to receive any injury to the cornea which might become infected from the lachrymal sac.

In acute inflammation, incision and drainage are, in the first instance, necessary; but, if there be much infiltration of the surrounding tissues, extirpation of the sac may be necessary after the acute symptoms have passed off.

Lastly, in those cases where there is persistent discharge associated with the presence of a lachrymal swelling, whether the contents be mucous, muco-purulent, or purulent, extirpation of the sac is undoubtedly the only rational treatment.

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## ON THE SYMPTOMATOLOGY OF ACUTE ABDOMINAL DISEASES.<sup>1</sup>

By JOHN PATRICK, M.A., M.B.,  
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GENTLEMEN,—My first word must be one of thanks to you for the honour you have done me in selecting me to preside over the meetings of the Society this the fifteenth session. I suppose there is no man amongst us who does not cherish some ambitions. It is not given to us who work and live in the east-end of Glasgow to let our ambition direct itself towards being the Prime Minister of the country, or winning the Derby, or becoming President of the Royal Society, no matter how prominent our position in local politics, or how enthusiastic our sporting inclinations, or how keen our scientific insight. But every man of us ought to be ambitious to do something for our own Society, and in due time gain his promotion to the President's chair. I feel, therefore, that in occupying this position to-night I have satisfied one, and that not the lowliest, of my ambitions. And I hope that in the new session the conduct in the chair will be quite worthy of its former occupants—men whom we all love and honour—and that the enthusiasm and energy of the chairman will be supported by like qualities in the members, coupled with due forbearance for mistakes and faults which will inevitably occur.

I have chosen for the subject of an address to open the session a study of some points in the symptomatology of acute abdominal diseases for several reasons. The first and main reason is that the variety of the symptoms is so great, their vagaries sometimes so extraordinary, that no attempt to

<sup>1</sup> Presidential address delivered to the Glasgow Eastern Medical Society, 2nd October, 1907.

reduce them to uniformity seems worth while, and if now it appears a hopeless task to make them conform to type, perhaps some day clinical surgery will become an exact science, and diagnosis will be as precise as in phthisis, and diphtheria, and cerebro-spinal meningitis. A second reason is that, both in private practice and in hospital, I have blundered in diagnosis and treatment, so that my motives have not been altogether disinterested. And the third reason is that a true appreciation of the nature and significance of abdominal symptoms by the family practitioner is of vital importance in diagnosis, and an absolute necessity if a reasonable chance of success is to be given the operating surgeon. For the surgeon, in a large proportion of such cases, is completely dependent on the observations of the doctor, who generally sees the patient before he becomes too ill to give an accurate account of his symptoms, and he often possesses valuable information gained in his previous acquaintance with the patient. Not only is the dependence of the surgeon on the observations of the doctor complete, but the surgeon may often too readily accept the diagnosis. And cases may be sent with "ready-made" diagnoses, and unnecessary operations performed. For example, let me quote the case of a young woman sent this summer to the Royal Infirmary with a note from the doctor to say that she suffered from perforation of a gastric ulcer. The surgeon saw no reason from the patient's symptoms *on admission* not to accept the ready-made diagnosis. But after a fruitless search for a perforated gastric ulcer, tried another likely region, and found a perforated appendix.

It is, however, a much more harassing state of affairs for the surgeon to have a case sent to hospital with no diagnosis, no note of symptoms, no indication whatever that a trained observer had seen the case at all. It is an everyday occurrence for cases to be sent to our large infirmaries, obviously suffering from acute abdominal symptoms, so ill that accurate diagnosis is impossible, and we know that very many of these cases have been in charge of medical attendants perhaps for several days. No man will be blamed for a wrong diagnosis, but any man is blameworthy who does not observe symptoms accurately, and note his observations so that another may be guided to a correct diagnosis. I shall not readily forget the case of a man of 45 or thereby, sent into the surgical wards of the Western Infirmary, obviously suffering from a very grave illness and too ill to tell anything about himself, without a note of any kind from the doctor in attendance. The professor

found only this symptom, that no urine had been passed for some hours, and that none was in the bladder. His provisional diagnosis was "suppression of urine," and the patient was transferred at once to the medical side. At the *post-mortem* examination, a perforated gangrenous appendix, with peritonitis, was found. I met the doctor, who sent the case in, shortly afterwards, and his scorn at the ineptitude of the distinguished surgeon was of the loftiest, forgetting that, however faulty the diagnosis of the surgeon, his own neglect to give such information as he possessed (and from what he said it was sufficient to have altered the whole treatment of the case) was not one whit less deplorable.

*Definition of acute abdominal diseases.*—Now, I have not offered you a precise definition of what I mean by acute abdominal diseases, but sufficient has been said to indicate that I propose to deal with some of the symptoms of intra-peritoneal conditions which arise suddenly *de novo* or in course of other affections more or less chronic, and which demand very active and speedy surgical treatment—in other words, the symptoms of that great group of conditions called by the Germans "ileus," where the symptoms are those of acute intestinal obstruction with peritonitis, or acute general peritonitis from a septic source. Those symptoms have been classed under the not very elegant term "peritonism," a term first used by Gübler in the *Gazette des Hôpitaux* in 1877, and since popularised by Treves, and also under the still less elegant term of the Americans, "acute abdomen." And in dealing with the subject we shall be as much concerned with explanations of their meaning and significance, even the mechanism through which they arise, as with their occurrence and relationships.

*Negative and positive symptoms.*—In all symptomatology we should never forget the advantage there is in carrying out our examination of the symptoms *seriatim*—the patient's position in bed, his facial expression, his indifference to or interest in our presence, his pulse and temperature readings, the information to be obtained by inspection, palpation, percussion, the examination of the external openings, and so on, running down the whole list so familiar to us as students, and so apt to be omitted in some of its details in practice. Next, we must not be carried away by the obtrusion of any particular symptom on our own or our patient's notice. Diagnosis cannot be founded on the presence of one symptom or sign,

even though it may usually be a constant. And, conversely, we must not exclude the presence of any particular disease from the absence of the usually constant symptom. It is not necessary for the pathognomonic symptom to be always present. This is a point to which Sir William Gowers<sup>1</sup> has drawn attention. He says, "Most diseases have commonly one or more symptoms that are usually present, and are characteristic. They are often termed 'pathognomonic.' But these common and characteristic symptoms are sometimes absent. The presence of a symptom may be of great diagnostic importance, and hence there is a constant tendency to regard the absence of that symptom as of similar importance—as negating the disease. But this is a very common cause of error. No mistake can be greater than to give the absence of a symptom a negative significance corresponding to the positive significance which its presence has."

Let me illustrate this dictum of Gowers with two examples.

A woman of 27, well known to me, complained of having had attacks of gastric pain, with flatulence and vomiting, which passed off in a few hours. These attacks occurred with tolerable frequency, and were thought by her to be due simply to "wind," though severe enough to compel her to go to bed. One of the latest attacks (the only one seen by me) was of great severity. I found her in bed in a state of marked prostration, with extreme pallor, frequent severe vomiting and retching, high temperature and rapid small pulse, together with constant agonising pain located in the left loin. Palpation in the left renal region elicited great tenderness, the pain radiating downwards into the left iliac region. My diagnosis was renal calculus, made mainly on the exact location of the pain. And I held on to the diagnosis, though the pain did not yield to moderately large doses of morphia, and persisted for three days. An x-ray photograph failed to reveal the presence of calculus. After another attack, this time with the additional symptom of hæmatemesis, gastric ulcer was diagnosed by one of the Royal Infirmary physicians on the basis of the vomiting of blood simply. An exploratory incision cleared up the case, as it was found to be a chronic pancreatitis, the pancreas being very hard and large. I do not say that we should have diagnosed chronic pancreatitis, but I think now that too much importance was attached by me to the one symptom of pain in the renal region, and also by the physician to the one symptom of bloody vomit, and too little to the history of the case.

<sup>1</sup> Gowers, *Phonographic Record*, July, 1907, p. 83.

Another example, and a bitter lesson to me, perhaps more typical of the mistake of giving to the absence of a symptom the negative significance commensurate with the positive significance of its presence, was this case. A man of 43 was admitted to Ward 29 of the Royal Infirmary, suffering from intestinal obstruction, with a history of appendicitis. I did not consider that operation was immediately demanded, and in a few days he was very well, the bowels acting, temperature normal, pain absent, and abdomen flaccid. I was sent for hurriedly, late on the fifth day after admission, and found the man in a prostrate condition, with rapid soft pulse, slightly subnormal temperature, a slight attack of diarrhoea, but with no vomiting and absolutely no pain, no abdominal tenderness, no muscular rigidity, and only slight abdominal distension. My first thought was that perforation had occurred, but I was completely deceived by the absence of pain and of all the ordinary signs of perforation with consequent local or general peritonitis. Two colleagues saw him with me and advised that no operation be done. The man died, of course, and at the *post-mortem* a large perforation in the appendix was found, and a diffuse septic peritonitis. It was a dear price to pay for the knowledge that perforation of an appendix may take place absolutely without pain. The error was that pointed out by Gowers of attaching to the absence of a symptom the negative significance commensurate with the positive significance of its presence.

*Facies Hippocratica; facies peritonealis; facies abdominis.*  
 —The first symptom to which I wish to direct your attention is that to which on coming to the patient's bedside we should almost instinctively look, and that is the facial aspect of the patient. I am disposed to think that those symptoms which were so prominent, and so much relied upon by physicians before the great advances of surgical science, are apt in present days to be overlooked. It is not easy to convince a house surgeon that the recognition of a facial expression is of as much importance as an estimate of the leucocytosis. What, then, is the Hippocratic facies? You will find Hippocrates' words in Finlayson's *Clinical Manual*:—"A sharp nose, hollow eyes, collapsed temples; the ears cold, contracted, and their lobes turned out; the skin of the forehead rough, distended, and parched; the colour of the whole face, green, livid, or lead coloured." It is, then, a facial aspect indicative of suffering and anxiety, as if the shadow of death were already falling across it. The *first* thing I have to say is that it is not

nearly so common as it formerly was, as the conditions which give rise to it are not so frequently found, because they are now anticipated by a timely operation. The *second* point is that it really is pathologically a somewhat late symptom. It indicates profound septic poisoning from acute peritoneal infection, which cannot take place for sometimes a good many hours after perforation of a viscus or after strangulation of bowel; except perhaps in typhoid perforation, where the patient is already profoundly poisoned. And the *third* point is that when it is present it is one of the best criteria that the abdominal lesion is extensive and severe.<sup>1</sup> This is recognised amidst all our modern diagnostic methods, and was insisted upon by the introducer of the discussion on "Septic Peritonitis" at Toronto, last year, Dr. Bond, who said, "Of all the signs on which we are accustomed to rely as indications of the patient's state, and as criteria of the extent and severity of the disease (namely, the vomiting, want of correspondence between pulse and temperature, the pain, the rigidity, and the distension), I place most reliance on the aspect of the patient, that subtle state of neuro-muscular tone which depends on the presence or absence of toxic effects on the nervous system." It is as distinctive as the facial aspect of cerebral abscess, the complexion in which is a curious grey-ashy colour, but devoid of the anxious, pained expression of the abdominal facies, which has been so definitely associated with peritonitis as to merit the designation "*facies peritonealis*."

That it is pathologically late in appearing and associated with septic poisoning from the peritoneum, except in some rare cases of streptococcus infection and in cases of swallowing strong irritants, might be illustrated by this case:—

R. W. was seen by me at his home, suffering from most violent abdominal pain of an hour and a half's duration. He was obviously in great agony, and was lying with his knees drawn up, and other symptoms which led me to diagnose perforation of the appendix. But his facial aspect was hardly altered; he was ruddy and placid-looking, almost phlegmatic. An hour and a half later I opened the abdomen and removed a perforated, gangrenous appendix, around which only a very limited peritonitis had had time to form. The *facies peritonealis* is then an indication only of extensive peritoneal infection, not of even such a serious lesion as perforation.

<sup>1</sup> Whiteford, *British Medical Journal*, 13th July, 1907, p. 77.



*Collapse; septic collapse.*—Then, next as regards collapse, it also as a symptom of an acute abdominal lesion is rarely an early one; it is more to be regarded as not the direct result of a perforation, but a manifestation of the absorption of the products of infection by the peritoneum. It will appear rapidly or slowly after perforation, depending on the virulence of the infective material. Two authorities of eminence may be quoted in this connection. Murphy,<sup>1</sup> of Chicago, says, "Collapse must now be recognised as a symptom of septic intoxication, and always a late symptom so far as the clinical course is concerned." And Moynihan,<sup>2</sup> of Leeds, in describing acute perforation of duodenal ulcer, says, "The pain is agonising, the patient has suffering written in every line of his face. But collapse is certainly not present. In cases recently seen (two within two hours after perforation) there has not been any collapse; the pulse was slow, 80 per minute, and of good quality. It is important to recognise that the conditions upon which we formerly depended to make the diagnosis should not be allowed to develop: the distended abdomen, the poor, rapid pulse, the shock or collapse, are not the early evidences of perforation, they are symptoms not of perforation but of the consecutive peritoneal implication."

Now these statements that collapse is absent in such tremendously acute lesions is not in accordance with what we have generally believed, and I think it must require some qualification. It may be that we have not hitherto seen those cases early enough to tell whether at the actual moment of perforation or strangulation collapse is observable. But I think that in many cases the patient is actually and truly "collapsed"—that is to say, he suddenly "falls together" from agonising pain alone. It may be that the word is used in much too loose a fashion. It is a favourite word of our patients, and for the majority of them it expresses most varied conditions, mostly trivial in comparison with the conditions we are now discussing. I think, therefore, the word should be absolutely reserved for those sudden, abrupt catastrophes where the patient literally appears to "fall together" like a burst balloon. And when we say that we find a patient in a state of collapse, we mean that he has actually in the space of a few minutes fallen from a condition of extreme health to one of extreme nearness to death. Where the patient has reached this state of extreme nearness

<sup>1</sup> Murphy, *Amer. Jour. Med. Sciences*, August, 1904.

<sup>2</sup> Moynihan, *Practitioner*, June, 1907.

to death after some days or at least after many hours' illness from acute intestinal obstruction or acute peritonitis, he is not suffering from collapse, he is suffering from septic poisoning. The one is an abrupt insult to the organism, the other is a continued injurious state of the organism.

*Interval of repose.*—Before leaving this subject of collapse it is interesting to know that after the initial shock or insult there is a reaction. The organism recovers temporarily. In a few hours (two or more) the pain subsides, the vomiting ceases, the pulse and temperature may become normal, and the patient so improved that the physician may be deceived. Indeed, the improvement may be so great that, as has been recorded, patients have been known to be able to walk into hospital with their peritoneal cavities bathed in gastric contents, or with tightly strangulated hernias.<sup>1</sup>

This period has been named by Moynihan the "interval of repose," and he says it is seen in all forms of perforation within the abdomen. Its duration is variable, so much will depend on the viscus perforating and the quality and amount of its contents extravasated into the cavity. Sometimes it may not occur, or be unrecognised, as in perforation of typhoid ulcer, where a general poisoning is already acting, and in streptococcic infection of the peritoneum in some appendix perforations, where the septic poisoning comes on with such marvellous rapidity as to kill the patient in a few hours.

*Nausea and vomiting.*—Of nausea and vomiting there is not much to be said. Vomiting is a common and very variable accompaniment of all abdominal diseases. It is an early symptom in acute appendicitis, in perforations of stomach, though, according to Buonner,<sup>2</sup> it occurs only in one-third of the cases in perforation of gall-bladder and in perforation of the appendix, and generally in all peritoneal infections. In all these it is an early reflex symptom, is not constant, and passes off quickly. In intestinal obstruction from bands, or other mechanical cause, if strangulation is sudden and acute, it appears early, and is reflex, but frequently it is a comparatively late symptom, and appears only when the distension of the abdomen has reached a certain degree. In obstruction, a rough estimate of the site of obstruction may be made from the rapidity or slowness with which this symptom

<sup>1</sup> T. C. English, in *Med. Chir. Trans.*, 1903; Alfred Young, *Glasgow Medical Journal*, September, 1907.

<sup>2</sup> Pearce Gould's *Year Book*, 1905.

appears. For example, in acute obstruction from a gall-stone, which most frequently occurs in the duodenum or upper jejunum, the vomiting appears very early, and rapidly passes through the various stages of stomach contents, bile-stained material, brown turbid fluid, to stercoraceous matter, the foetid contents of the small intestine. Again, in obstruction from a band stretching across the lower ileum, or in intussusception, vomiting is not severe and not frequent, and may not become stercoraceous for two or three days, if at all. The word "stercoraceous" is to be preferred to "fæcal" vomiting. Fæces, strictly speaking, are the contents of the large intestine, and vomiting of fæces is, on account of the presence of the ileo-cæcal valve, a practical impossibility, except in the establishment of a colo-gastric fistula in cases of cancerous tumour. In obstruction of the upper jejunum by a gall-stone the vomit may become stercoraceous in twenty-four hours and enormous in quantity, the contents of even that short piece of small intestine becoming foul, putrid, and decomposing, with the characteristic odour. The constant persistent effortless vomiting is almost certainly due to mechanical obstruction; the vomiting of inflammatory conditions so long as they are local is inconstant, painful, and accompanied by retching, and not a very prominent symptom; it soon ceases, unless general peritonitis supervenes, when it begins again, and the vomited material is brown and turbid—another indication of septic poisoning.

*Pulse and temperature.*—It is customary in many acute affections of the abdomen to regard the pulse and temperature observations as unreliable aids to diagnosis. If the pulse-rate rises concomitantly with the temperature when we expect it to do so we are satisfied. But it is frequently the case that the pulse-rate is high and the temperature low, and *vice versa*, and it frequently happens that the conditions found at the operation are more serious, or not so serious, as we expected from these observations. But it is hardly fair to lay the blame of unreliability on the pulse and temperature readings. We must not think that because a series of symptoms and a series of observations do not fit one another that these observations are of no importance, and no diagnostic value. The pulse and temperature observations are valuable as we interpret them aright, and our interpretation is of moment in proportion to our knowledge of the significance and meaning of the alterations of the phases of the disease.

There is usually a marked difference between the pulse and

temperature readings of the mechanical obstructions and the inflammatory diseases. Normal temperatures will prevail in most cases of acute intussusceptions, obstructions by bands, volvulus, by the time we see the patient, though at the moment of onset the temperature is subnormal. In these cases as they advance even the onset of peritonitis may not affect the temperature. There may be sufficient vitality to produce a rise to 99° or 100°, but that is not common.<sup>1</sup> But in these obstructions the pulse attracts attention at once; it is small, rapid, and thready in the first instance, and it may improve as the first shock passes off, returning quickly again to the small pulse of strangulation. But in intussusception and volvulus and obstruction by bands, so long as the attack is not of the suddenness of strangulated hernia, and that is often, the pulse remains good, not rapid, though perhaps soft. As vomiting and distension continue the temperature remains normal or slightly subnormal, and the pulse becomes more rapid, more soft and thready. Yet in these cases there must be absorption of poisonous products from the bowel going on with increasing rapidity from the moment that the lumen is obstructed. These toxins are the product of saprophytic organisms, and others of not excessive virulence like the colon bacillus. There appears to be little or no alteration in the pulse and temperature till the organisms and their poisons pass through the paretic bowel wall and infect the peritoneum.

Now it is quite a different story as to pulse and temperature when we consider the acute inflammatory affections. In appendicitis the ordinary behaviour of pulse and temperature is well known. Here their synchronous rise are indications of absorption of products of infection, and not necessarily as manifestations of the presence of pus. In acute appendicitis elevated temperature appears very early, and with it the pulse-rate is increasing rapidly. Acute inflammatory reaction is going on in the lining membrane, the mucosa, of the appendix, and there is considerable rapid absorption. There may be no further destruction of tissue, and the inflammatory process may then subside with declinature of pulse and temperature. But destruction of tissue may go on, and penetration through the appendix walls by the organisms may take place, and there is, therefore, an invasion of fresh tissue, the meso-appendix, the retro-cæcal tissue, and the neighbouring peritoneum. This produces a fresh rise of temperature and pulse-rate, continuing with formation of inflammatory exudation, the formation of adhesions, and in time formation

<sup>1</sup> Treves, *Intestinal Obstruction*.

of pus, till localisation and delimitation of the abscess take place. Then the temperature will come down, the pulse-rate diminish, because absorption has ceased, until there may actually be a fairly large abscess around the appendix, with a normal temperature and almost normal pulse. Then when the surgeon who sees the case for the first time finds a large appendicular swelling and plenty of pus, with nearly normal pulse and temperature, he abuses the pulse and temperature as unreliable aids to diagnosis, instead of congratulating himself that they really indicate the cessation of absorption of poisonous products, for the time being at anyrate.

The converse state of matters may be found at the operation, where one's fears were not justified, where the pulse and temperature seemed to indicate that a severe amount of inflammatory mischief might be found, and the appearance be actually almost normal.

This is well shown in the accompanying chart of a patient in the Royal Infirmary this summer, who was brought in with acute appendicitis. All the symptoms subsided except the rapid pulse and elevated temperature. The appendix when I removed it appeared perfectly normal. From the day of the operation the temperature and pulse-rate fell to normal. Whatever absorption of toxins was still going on was cut short by the removal of the seat of absorption.

If rupture either of an appendix, or duodenal or gastric ulcer takes place, there is a primary drop in the temperature to subnormal. This may continue for a short time only, when it is followed by a rapid rise as peritonitis supervenes. The rise of temperature and pulse-rate will depend on the character of the material poured out into the free peritoneal cavity. If that material is partially digested food from the stomach, or duodenum, infection of the peritoneum is comparatively slow, for this material may be sterile and has been proved to be sterile twelve hours, even in one case twenty-four hours, after the perforation. If the extravasated matter is pus containing the staphylococcus, or bacillus coli, or gonococcus, the rise in temperature and the pulse-rate are again comparatively slow in appearing; but if it is a streptococcic infection the catastrophe is of terrific speed, the pulse will be very rapid, the temperature generally high, and death may come in a very few hours.

I have been once greatly deceived by a sudden drop in temperature from  $103^{\circ}$  to normal in twelve hours in a case diagnosed by me as appendicitis. The same thing happened twice afterwards in this patient, but I had since found out

that it was a case of salpingitis and not appendicitis. A sudden drop to that degree in an appendix case would mean gangrene, though it is, apparently, an ordinary event in a salpingitis.

*Abdominal distension.*—Abdominal distension is a symptom which used to be regarded as of paramount diagnostic importance. It still is one of importance, but we recognise it to be comparatively late in appearance in the course of most acute abdominal affections, and one which should be anticipated by treatment, though it is generally not our fault, but our patient's that it is not. It occurs in mechanical obstructions as a manifestation of paralysis of the muscular wall of the gut, and is generally synchronous with increasing pulse-rate and deepening apathy. It occurs in all forms of perforation of a viscus, although Senn, of Chicago, says that in his experience it is rare in perforation of appendix, and common in perforation of other viscera. In acute mechanical obstructions visible peristalsis may be found, and the patient may be able to indicate just where the peristaltic wave ceases. In these obstructions I have been very much impressed by the very late appearance of distension. In eight or nine cases of intussusception, seen from two hours to four days after the occurrence of the invagination, distension was never so great as to prevent palpation of the tumour. The lower the obstruction the greater the delay in the development of meteorism.

Distension of the bowel, then, is to be regarded as due to paralysis of the muscular layer of the bowel wall brought about by a combination of factors—the decomposition of bowel contents with formation of gases, disorders of the circulation in the bowel, and chiefly by the direct action on the neuro-muscular apparatus of the bowel of the toxins produced by organisms both from within the bowel and from the peritoneum.

Obliteration of liver dulness is a favourite text-book sign, but practically a useless one. If the obliteration arises from distension it is of no use to us as a sign, for we know enough about the case already. But the sign is of use if it is found in a retracted abdomen, or one not distended, for then it indicates the presence of free gas in the cavity—a sign of rupture of the alimentary canal, or some point or other.<sup>1</sup>

*Muscular rigidity; défense musculaire.*—While the sign

<sup>1</sup> Watson Cheyne, *British Medical Journal*, 17th June, 1905.

distension of the abdomen is to be regarded as peculiarly one of mechanical obstruction, or late in the course of general peritonitis, muscular rigidity is peculiarly a sign of the inflammatory affections. It is essentially nature's attempt to protect the inflamed structures below. It is a reflex phenomenon, and is to be distinguished from voluntary rigidity produced by the patient when the hand is placed on the abdomen. (This latter rigidity is almost invariably overcome by continued gentle pressure.) Its mechanism will be explained in speaking of the mechanism of visceral pain with which it is associated.

Muscular rigidity—the *défense musculaire* of Dieulafoy—varies in extent in direct ratio to the size of the area to be protected. In general peritonitis every muscle which goes to form the abdominal parietes, inclusive of the diaphragm, is hard, board-like, in a state of tonic contraction, so that even firm pressure will not elicit a greater degree of pain than is already present.

At the outset of acute appendicitis, or subacute perforation of the stomach, there may be general rigidity, but this very soon passes off, and the rigidity is fixed, especially over the seat of the disease. Rigidity of the muscles in the right iliac fossa is familiar as a sign of appendicitis with varying degree of peritoneal infection. So, also, is rigidity of the right rectus abdominis in almost its whole extent in perforation of the appendix and perforation of the duodenum. Indeed, Moynihan finds that it may be so localised as to permit him to diagnose duodenal ulcer by rigidity of the upper end of the right rectus, and gastric ulcer by rigidity of the upper end of the left rectus.

It is extraordinary that muscular rigidity should cease to operate in moderately large abscesses lying close under and attached to the abdominal wall. In many of these fluctuation may be easily made out through the muscles. They apparently cease to protect the abscess itself, but they continue rigid all round the abscess, so that the risk of free handling will not break down the adhesions separating the abscess from the rest of the abdominal cavity. I have not known of a case where an abscess seemed to have been burst into the cavity by too free handling from without (though it is, of course, a possibility), and an explanation may be afforded in the fixity of the abdominal muscles in the zone of the parietes surrounding the abscess. It might be suggested that nerves in the subserous layer are no longer capable of carrying stimuli to the overlying muscles, perhaps even a temporary disturbance of

the trophic supply to these portions of the muscles is brought about as a preparation for the escape of pus through the abdominal wall, unless anticipated by artificial means.

*Abdominal pain.*—The next symptom to be considered is one which is of prime importance to us as an aid to diagnosis, and the symptom which appeals most to the patient, namely, pain. Now I do not propose to bring before you all the various kinds of pain met with in abdominal diseases, but I wish to indicate that in spite of the notorious variableness of pain, and in spite of the intervention in every case of the personal equation, certain well-defined lines are followed. The three main classes of abdominal diseases are—(1) The mechanical obstructions—volvulus, intussusception, adhesive bands, hernias, with the various twists of pedicles; (2) perforations of viscera, duodenum, stomach, gall-bladder, small intestine; and (3) the inflammatory diseases, chiefly those arising in connection with the appendix, and perhaps some forms of tubercular peritonitis. Other acute abdominal conditions are omitted, as they have other special characteristics upon which the diagnosis will rest—thrombosis or embolism of the mesenteric vessels, passage of gall-stone or of renal calculus, rupture of ectopic gestation or of a pus-filled Fallopian tube.

In the first class—the mechanical obstructions—the pain is only very acute when strangulation takes place suddenly, then the patient will be doubled up with the acuteness of the pain, felt generally over the abdomen in the umbilical and gastric regions chiefly. In a few hours it may be possible to localise it better, and he may be able to point to one spot where the pain is acutest, or there may be a more highly sensitive area of the skin of the abdomen,<sup>1</sup> which will be found to be over the seat of the lesion. But the pain in most mechanical obstructions (certainly in band obstructions and in intussusception) is comparatively slight at first, occurring in spasms as the bowel makes increased peristaltic efforts to overcome the obstruction, and the patient's general condition may be deceitfully satisfactory. Much depends on the tightness of the constricting band, and, in volvulus, on the amount of bowel involved. The age of the patient is important—an old man will complain very little of a strangulated hernia, a child of 6 months may have only an occasional whining cry to indicate the presence of an intussusception. I have known colicky pains of complete obstruction by a band occur only at

<sup>1</sup> Mayo Robson on "Volvulus."



half-hourly intervals, and yet each pain was accompanied by vomiting of stercoraceous material; and in another case of volvulus of the sigmoid the patient complained of little or no pain, even though the obstruction had been present for three days.

In the second class—the perforations of viscera—the amount of pain varies greatly; as a rule, it is very acute, more or less localised, fixed, and persistent, not colicky, and it is more quickly followed, after a short period of reaction, by signs of infection of the peritoneum, the rapidity of appearance of these signs depending on the toxic nature and quantity of the materials poured out into the cavity. The severity of the first symptoms will often depend on the size of the perforation, and whether adhesions have already formed around it, and the course of the peritonitis may be greatly influenced by the site of the perforation. In perforation of a duodenal ulcer the extravasated materials pass down towards the right loin into the right iliac fossa, infecting the peritoneum in that whole tract, so that the case may simulate acute appendicitis with perforation. In a case of perforating duodenal ulcer where a mistaken diagnosis of appendicitis was made, and the appendix region opened, the peritonitis was limited to the right side, and for seven days, till the patient died, a constant stream of bright green bile poured out through the appendix wound. Stomach contents, on the other hand, tend to spread themselves over the upper surface of the omentum and to flow towards the left side of the abdomen,<sup>1</sup> hence pain will be in gastric region then towards the left side.

Then, third, in the inflammatory group, I have little to say of the ordinary attack of appendicitis except this, that pain, according to Murphy, of Chicago, is invariably the first symptom. If nausea and vomiting and high temperature precede the pain the case is not one of appendicitis.<sup>2</sup> This first pain is referred across the abdomen at the umbilical level; it is only after the lapse of some hours that it is localised in the appendix region. Then, if it subsides suddenly within the first thirty-six hours, the subsidence is due to the relief of tension within the appendix, and the liberation of infected material through the wall of the appendix into the meso-appendix, with subsequent formation of abscess and recrudescence of the pain till the abscess becomes localised, or the sudden relief of pain may be due to

<sup>1</sup> Bruce Clarke at Toronto, *British Medical Journal*, 1906.

<sup>2</sup> Murphy on "Appendicitis" in Goold's *Year Book*, 1905.

gangrene of the appendix. In fulminating appendicitis the pain is from the first severe, persistent, and accompanied by considerable amount of tenderness.

The last point to be noticed in appendicitis is the frequency with which pelvic appendicitis is found. Cases are found in which the history and symptoms all point to appendicitis, but examination of the appendix region proves to be negative. There may be fulness in the middle line of the abdomen, as in a case of mine which exactly simulated a very full bladder, but where the swelling proved to be a large abscess which had filled up from the pelvis, originating from a perforation of the tip of the appendix, which lay on the brim of the true pelvis. But frequently examination of the abdomen is entirely negative until the pelvic peritoneum is examined through the rectum or vagina, and pain or swelling or both towards the right side may be found. That is to say, the appendix hangs low over the pelvic brim and infects the peritoneum there first.

Now, what is the meaning and mechanism of abdominal pain? How is it brought about? Why is the pain of renal colic felt in the testicle, the pain of strangulated hernia referred to the umbilical region, that of gall-stones to the gastric region and below the right scapula, that of the initial stage of appendicitis to the umbilical area or down the leg? What is the origin of these referred pains?

And, again, is the pain of a visceral lesion actually felt in the viscus? How can we account for the well-known fact that the viscera can be freely handled in a conscious patient, and the peritoneum torn, cut, and burnt, and the patient feel no pain? Are the sympathetic nerves incapable of conveying painful impressions?

These questions have had answers supplied by various authors, amongst them Henry Head of London, James Mackenzie of Burnley, and Professor Lennander of Upsala.

Head's investigations have satisfied him that there is a correspondence between the sympathetic and spinal distribution of nerves, that the sympathetic nerves from the viscera are linked up to certain segments of the cord, and that stimuli from these visceral areas are transmitted to the segments of the cord and referred to definite cutaneous areas by the spinal nerves.

The anatomical connection of the sympathetic plexuses to the spinal nerves is seen through the communicating branches. Head has shown that the whole surface of the body can be mapped out into quite definite bands or areas, which do not

overlap, and which correspond to various segments of the cord. And in these areas he found certain "maximum spots" of most marked tenderness and pain. "The pain, therefore, is referred, not so much along the course of definite nerves, as to areas corresponding to the cutaneous supply of segments of the cord from which the posterior nerve roots arise."<sup>1</sup> For example, the umbilical pain felt in strangulated hernia is to be explained by the stimulus from the constricted gut passing from the superior mesenteric plexus through the splanchnics to the segment of the cord from which emerge the ninth and tenth and eleventh intercostals which supply the skin of that region.

Then, again, the pain of stone in the pelvis of the kidney, or stone passing down the ureter, is felt in the loin, iliac region, and testicle. There is no direct nervous connection between these regions, so that the stimuli from the presence of the foreign body are transmitted from the renal plexus by its connections to the eleventh and twelfth intercostals supplying the loin and iliac region and first lumbar, a twig of which last supplied the testicular coverings before the descent to the scrotum, and still persists.

In appendicitis, in its early stage before infection of the peritoneum, an area of cutaneous hyperalgesia has been found (Head says it is always found) over the appendix region by pinching the skin between the finger and the thumb. This hypersensitiveness cannot be due to inflammation of the underlying appendix: it must arise from some circuitous nerve-current coming by way of the superior mesenteric plexus to the segment giving off the ninth, tenth, eleventh, and possibly twelfth intercostals.

This hypersensitiveness of the skin disappears as peritonitis supervenes, and, instead, there is greatly increased muscular hyperalgesia—the slightest pressure on the muscles causing pain, and also causing an increased muscular rigidity. The pain of peritonitis, then, is not a referred pain strictly. It is not transmitted through the sympathetic nerves, but through the abundant sensory nerves in the parietal subperitoneal tissue. Lennander holds that "all painful sensations within the abdominal cavity are transmitted only by means of the spinal nerves supplying the parietal peritoneum and its subserous layer." The viscera themselves are said to be insensitive to all the ordinary methods of producing pain which would affect our skin.

What, then, is the importance of the visceral reflexes? It

<sup>1</sup> Maylard, *Abdominal Pain*, p. 41.

is that they are protective. The pain felt in the neighbourhood of an organ is assumed to be felt in the organ. But if we consider the case of a gastric ulcer, we find the pain is felt in the epigastrium. Where the pain is located the rectus muscle is slightly rigid on examination, and if pressure be exercised the hardness of the muscle increases at once, and at the same time the patient is conscious of great pain from the increased pressure. Now, reference to a diagram of Mackenzie's will show that gastric ulcers are not situated under the seat of pain. He made most precise observations in three cases where he was able to locate the ulcer by means of the situation of the pain.

In the first case he saw the patient twenty hours after perforation of a gastric ulcer. She had suffered for months from pain after food, and always located the pain with great precision in the *upper* part of the epigastrium over the ziphisternum. He reasoned that the ulcer was situated near the cardiac end of the stomach, and at the operation it was found to be so.

The second case was that of a girl who always located the pain exactly in one spot in the *middle* of the epigastric region. The ulcer was judged, rightly as it proved, to be situated in the middle region of the stomach, and the operation-incision was accordingly placed well to the left of the middle line.

In a third case the relation of the site of pain to the situation of the ulcer was carefully noted in a case which came to the *post-mortem* room. There was a small area of skin in the *lower* epigastrium showing where the patient had been accustomed applying a blister to relieve the pain which had its origin in an ulcer situated in the pylorus.

Were the stomach itself sensitive, violence would reach and injure it before pain was experienced, but by the interposition of sensitive structures, coupled to a powerful muscular reflex external to the stomach, it is guarded effectually.<sup>1</sup>

In acute peritonitis the protective effect is shown as vividly by the reflex rigidity of the whole of the muscular layer providing the board-like abdomen.

Lastly, in this connection let me mention the theory of Lennander and Wilms, that the pains in increased peristalsis and in abdominal distension, that is, "colicky" pains, are due to stretching of the mesenteric attachments of the bowel, causing tension on the terminal nerve twigs of the *parietal* serous and subserous layers. The acute pain felt at

<sup>1</sup> Mackenzie, *British Medical Journal*, 25th June, 1906, p. 1449.

the onset of intussusception and volvulus is thus explained. The older theory, that colic pains were due to pressure on the nerves of the bowel owing to tonic contraction of the muscular coat, is discarded, as it is found that the bowel can be crushed with forceps painlessly in a conscious patient.<sup>1</sup>

It is plain, however, that the last word has not been written as to the true cause of abdominal pain. One can hardly believe that the agony we so frequently witness can be explained in this airy fashion, but these are worth knowing, for they are good working hypotheses.

Now, in four final words, let me put before you some conclusions to be drawn from consideration of these symptoms:—

1. We must note that many of these symptoms, formerly regarded as diagnostic, are really very late in the pathological procession of events.

2. The terminology must in not a few instances be rendered more precise—"collapse," "meteorism," "obliteration of liver dulness," might quite well be expunged, while a phrase like "acute abdomen" should never be seen on the printed page.

3. Symptoms should not be considered as isolated units, but should be taken in groups, so that the true value will be put on the presence of one, and not too much made of the absence of another.

4. As a corollary to the foregoing, the necessity for studying the whole man, and not a little bit of him, is greater than ever.

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## Obituary.

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JAMES WHITSON, M.D., F.F.P.S.G.

THE death of Dr. James Whitson, of Essendy, Blairgowrie, occurred with startling suddenness on 27th October last. He had gone to take a bath, as he generally did before retiring to rest, when a sound of some one falling was heard, and before his alarmed servants could reach him he had passed away. For a good many years back his health had been none of the best, but he had rallied, to some extent, since his retiral, about seven years ago, from professional work in Glasgow. He was born some sixty years ago in

<sup>1</sup> Lennander, *Edinburgh Medical Journal*, August, 1907.

the manse of Crossmichael, Kirkcudbrightshire, of which parish his father, the Rev. John Whitson, M.D., was for a long period the esteemed minister. After acquiring the usual school education at Madras College, St. Andrews, and St. Clere, Kent, Whitson began his Arts classes at Glasgow University in 1863, and subsequently entered upon his medical course, qualifying as M.B., C.M., in 1871, and M.D. in 1876.

His appointment as house surgeon in our Royal Infirmary, under the late Dr. Dewar, led him to select surgery as his special field, and though he never acquired a large practice in it, he made it from the first a subject of careful study. A few years later he was appointed assistant surgeon to the Infirmary, and in that capacity he continued to keep well abreast of the rapid advances of his art until the state of his health compelled him to take some rest and change.

To go back, he became in 1874 surgeon to the 1st Lanark Rifle Volunteers, and this in turn led to his becoming one of the founders of the St. Andrew's Ambulance Association. With this latter, especially, he was closely identified until his retiral from practice. For many years he was convener of its medical committee, whilst as a member of Council he took a leading part in the general management of the Association, effecting many reforms and promoting important undertakings, such as obtaining for the Association a Royal Charter. At his death he was one of the vice-presidents of the society.

It cannot, after all, be said that Whitson made any distinctive mark in surgery in the popular sense. He was not a plausible man. His best lay deepest. He never concealed his scorn for the petty rivalries of city life. He was not a city man at all. He was unsparing in his denunciation of everything that was shifty and mean. It was an offence to him, and he showed it. He was sometimes mistaken in his judgment, like the rest of us, but he was often right; and many things he set right which others would have allowed to pass.

He came of a gentle stock. The Whitson property, Bardmony, in Forfarshire, went to his father's eldest brother, but the estate of Essendy he inherited through his paternal grandmother from her brother, Dr. Freer, who was Professor of Medicine in Glasgow University early in last century. It was in the old house of Essendy that one discovered what Whitson really was, how that whatever he said or did was based on the highest sense of honour, and that under his

hospitable roof one was in the company of a gentleman of the olden time.

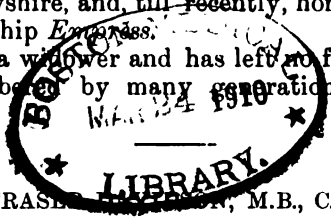
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ROBERT DOUGLAS REID, L.F.P.S.G., L.R.C.P.E., J.P.

ON Tuesday, 17th December, there passed away, in his eighty-fifth year, Dr. Douglas Reid, who was for so long closely identified with Helensburgh. Dr. Reid qualified in 1842, in which year he obtained the License of the Faculty of Physicians and Surgeons. He commenced work in Port-Glasgow, but many years ago left that town and settled in Helensburgh. Here he built up a very large practice, from which he retired some years ago.

He was one of the original members of the Queen's Own Glasgow Yeomanry, and held the rank of Surgeon-Colonel in this regiment. When in uniform he had the distinction of wearing on his right breast two medals. These were awarded to him for saving lives from drowning. He was a J.P. for Renfrewshire, and, till recently, honorary surgeon to H.M. Training Ship *Enterprise*.

Dr. Reid was a widower and has left no family, but he will long be remembered by many generations of patients in Helensburgh.



JAMES FRASER, M.B., C.M., HARRIS.

DR. DAVIDSON, whose death took place in October last after a long illness, was a native of Glasgow. He was born in 1858, obtained the Triple Qualification in 1886, and graduated M.B., C.M. Glasg., in the following year. He practised for several years in Tomintoul, removing thence, about four years ago, to Harris, where he became Parochial Medical Officer. Towards the end of 1906 it became evident that he was suffering from a serious affection. He was confined to bed for a period of eight months, and during the whole of this time he was most uncomplaining. His death occurred somewhat suddenly some two months after his return to work.

ROBERT GIRVAN, L.R.C.S. ED., MAYBOLE.

ON the 9th of last month Dr. Robert Girvan died at his residence, in Maybole, after a short illness. Deceased, who was in

his seventy-sixth year, became a Licentiate of the Royal College of Surgeons of Edinburgh in 1854, and immediately thereafter commenced practice in Maybole. He was Parochial Medical Officer for Maybole and Kirkmichael, and in June, 1904, attained his jubilee in this post. He was also Surgeon-Lieutenant Colonel V.D. (retired) of the 2d V.B. Royal Scots Fusiliers. He is survived by a large family, of which three sons are members of the medical profession.

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## CURRENT TOPICS.

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GLASGOW UNIVERSITY: APPOINTMENT OF EXAMINERS.—At a meeting of the University Court on 12th December, the following additional examiners were appointed in the Medical Faculty:—*Chemistry*, Professor John M. Thomson, King's College, London; *Botany*, J. Reynolds Green, Sc.D., F.R.S., Downing College, Cambridge; *Anatomy*, Professor A. H. Young, M.B., F.R.C.S., LL.D., The University, Manchester; *Medical Jurisprudence*, Professor J. T. J. Morrison, M.A., M.B., F.R.C.S., The University, Birmingham; *Medicine*, Charles O. Hawthorne, M.D., M.R.C.P., 63 Harley Street, Cavendish Square, London, W.; *Surgery*, James H. Nicoll, M.B., 4 Woodside Place, Glasgow; *Midwifery*, Samuel Sloan, M.D., 5 Somerset Place, Glasgow, W.

THE MEDICAL SERVICE OF THE TERRITORIAL FORCE.—A memorandum on the above has been issued by the Director-General of the Army Medical Service. In this document we find that the arrangements which obtain in the Volunteer Medical Service are to be very much altered. The profession is to be consolidated into a homogeneous corps; but it is at the same time proposed to perpetuate the regimental system which at present exists. While in some respects the new organisation is but an expansion of the existing organisation of the Medical Service of the Volunteers, there are some features altogether new. A selected officer will be appointed to each Division, for administrative duties. Again, the Territorial Force will be supplied with general hospitals, which will be staffed by civil hospital physicians and surgeons. These staffs, although possessing no organic



connection with the Divisions, will, like the various medical units, be raised in the same territorial areas, for work in time of war in the vicinity of their own civil hospitals. Further, the co-operation of those members of the profession who are engaged in preventive medicine will be sought, to help in the preservation of the health of the Territorial Force troops during operations for home defence. These, like the hospital physicians and surgeons, will be asked to become officers *à la suite* of the Medical Service. In time of peace no demands will be made on the time of the *à la suite* members. The whole will be placed under the Director-General of the Medical Service.

The *personnel* will, therefore, be distributed—

- (a) To combatant units (*i.e.*, regiments) for general medical and sanitary work.
- (b) To Field ambulances.
- (c) To hospitals.
- (d) To the Sanitary branch.
- (e) To the Administrative Divisional Staff.

To help Volunteer Medical Officers to obtain certificates of proficiency, schools of instruction will be multiplied, and the resources of every military hospital throughout the country will be placed at the disposal of the Medical Officers of the Territorial Force.

“In a word, the position which the Army Council seeks to attain in regard to medical organisation and training is one in which the general arrangements year by year shall be made by the members of the medical profession in each Territorial area after conferring with one another, the results of the conference being submitted to the Director-General . . . by whom it is proposed the training shall be administered.”

Such is Sir Alfred Keogh's scheme, unfolded in an official memorandum which is a model of conciseness. Tables of details are appended to the document; but these do not concern us here. Suffice it to say, that for an Army based on voluntary enlistment, the scheme is as nearly perfect as one could hope for. We congratulate Sir Alfred on his great conception, and we look forward to seeing it meet with the success which it undoubtedly merits.

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1907-1908.

MEETING III.—1ST NOVEMBER, 1907.

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*The President, DR. WALKER DOWNIE, in the Chair.*

L.—NOTES ON AN INTERESTING CASE OF SEVERE DIPHTHERITIC PARALYSIS, WITH REMARKS ON THE RELATION BETWEEN THE SEVERITY OF ATTACK IN DIPHTHERIA AND THE OCCURRENCE OF PARALYSIS.

By DR. A. B. SLOAN.

The case that I purpose bringing under your notice to-night is one of considerable interest. The patient was under my care in the Western Hospital, London (Metropolitan Asylum Board), and I am indebted to Dr. R. M. Bruce, the Medical Superintendent, for permission to report it. I think that it should be specially interesting to members of this society in that such cases have not been common in Glasgow during recent years at least. While this has been so in Glasgow, it is curious that cases of severe diphtheritic paralysis, of the type illustrated by this case, have been comparatively common in London. It is instructive to note, at the same time, that the hospital death-rate in both cities has been much the same.

The notes of the case are as follows:—

W. K., aged 5 years, was admitted to the Western Hospital, Fulham, on 3rd June, 1903. He had sickened on 30th May—four days before admission—having then a sore throat, some glandular swelling in the neck, and some nasal discharge; the following day there was shivering, vomiting, and headache. When admitted he was very pale, and his pulse was extremely poor. The tongue was moist at the edges, dry, and brown down the centre. The tonsils were swollen, and both covered with diphtheritic membrane. The glands at the angle of the jaw were much enlarged on both sides. The skin was free from petechial spots, and showed no rash. It was very evident

that the child was dangerously ill, and thus a large dose of antitoxin (36,000 units) was given.

On the night of admission he vomited twice. The following day, although the throat was rather cleaner, the glandular swelling was no less, and there was very profuse rhinorrhœa. On the 5th there had been no recurrence of vomiting, the child was taking his nourishment fairly well, and the throat was somewhat cleaner. There then occurred, however, profuse epistaxis, but no petechial spots or "bruises" were present. On this day another 18,000 units of antitoxin were given. On the 6th the epistaxis had ceased, but the nasal discharge was very profuse, and was blood-stained. On this date two "bruises" (subcutaneous ecchymoses) appeared on the skin over the sacrum, the pulse was fair, and further 18,000 units were injected. During the 7th and 8th the child steadily improved, the pulse being fuller and of better quality. On the 8th the rhinorrhœa had quite ceased, and the throat was free from membrane, although not quite clean. On the 9th the report states that the boy was doing well, but that he was speaking with a marked nasal tone; there was slight difficulty in swallowing, and he vomited once. During the following day there was no recurrence of vomiting, the heart sounds were clear and fairly strong, and the pulse (although not strong) was regular and not frequent; he showed more marked palatal palsy, but was still swallowing well, although not willingly. Two days later he was coughing a little, and the character of the cough was suggestive of laryngeal paralysis. He vomited once on the 12th. On the 13th more severe symptoms showed themselves (the slight difficulty in swallowing and the occasional vomiting had been distinct danger signals). At 7 A.M. he vomited, the pulse was very small, and markedly irregular, the heart sounds feeble and "running" at times. At 9 P.M. the radial pulse could scarcely be appreciated; the heart sounds were feeble and foetal in character. The cardiac dulness, however, was little increased. The boy's extremities were moderately warm. (At this time a practically hopeless prognosis was given to the parents.) He had vomited thrice during the day, and on account of this he was put on rectal feeds, and all feeding by the mouth was stopped. He retched a good deal during the night of the 13th, but it had ceased by the morning; by that time the heart's action was slightly stronger and not so frequent, although still 127 per minute. The cardiac dulness now extended 1 inch external to the nipple line. The rectal feeds were being well retained. During the 15th and 16th vomiting occurred at times, and

during one attack the patient was somewhat collapsed. He remained free from vomiting during the 17th and 18th, and he was growing rather better. On the latter date, however, a fresh complication was noted—the urine was found to contain abundant albumen (no blood). On the 19th the urine showed so much abumen that it almost boiled solid. The boy had only passed urine once in the twenty-four hours, and the face was slightly “puffy.” The following day there was distinct œdema of the legs, and the face was markedly cedematous. The quantity of urine per day at this time was about 20 oz. On the 22nd it was observed that mucus was gathering in the pharynx and causing annoyance. By the morning of the 23rd this was more marked, and the boy could not swallow. On this day the pulse was rather softer than it had been, but the heart sounds were good, and the diaphragm was acting well. The boy’s head was hung over pillows. Owing to the presence of œdema, and the dependent position of the head and neck, the face and scalp became very cedematous by the 25th, causing great disfigurement. This, however, could not be avoided, as if the child had been lying flat he would inevitably have choked. On the 25th there was a very free discharge of mucus from the nose. By this time the child had been twelve days solely on rectal feeds, and the vomiting having ceased, a nasal feed was tried, but was rejected. During the 27th, 28th, and 29th the child improved slightly, the pulse was fairly good, and there was no recurrence of vomiting; the urine still contained considerable albumen. A nasal feed was again tried on the 29th, but was rejected. For a few days after this he was not so well again, his colour was bad, and there was an increased flow of nasal and pharyngeal mucus. On 5th June, for the first time, he retained a nasal feed, and had three that day. His general condition after this improved considerably, but he made no attempt to swallow.

The boy remained in this somewhat anxious condition—his head reclining over pillows, mucus discharging freely from the nose, with absolute inability to swallow, and being nasal-fed up to 21st July. On 20th July the notes state that he was much enaciated; the pulse was good, but at times the patient was slightly livid.

He was able to swallow for the first time on the 24th, on which day he had some bread and butter, and on the next day he could swallow liquids.

From this time onward his progress was uninterrupted. On 10th August he was allowed to be raised on three pillows; on the 15th he was permitted to sit up; on the 17th he got up in

"blankets," and on the 22nd got his clothes on. He was dismissed well on 12th September.

This case shows some specially interesting features. In the first place, the case was a very severe one, and the favourable issue was very gratifying. I would point out that in addition to the amount of membrane on the fauces, the considerable nasal involvement, the marked glandular enlargement, and the pallor of the skin—all which signs taken together show a grave condition in any case of diphtheria—there was another sign present of grave significance, I refer to the tendency to hæmorrhage. The occurrence of free epistaxis, such as this boy had, is always a symptom of serious import, and when along with this subcutaneous echymoses, such as he showed, develops, the prognosis becomes even more clouded. This case just fell short of developing all the typical signs of hæmorrhagic diphtheria by the absence of bleeding from the throat, and the absence of the typical petechial hæmorrhage usually seen in the skin. It is almost unknown for a case developing all the signs of hæmorrhagic diphtheria to recover. I might just mention in passing that "hæmorrhagic" cases were quite common in London (2-3 per cent of the cases) when I was a resident assistant, while in Glasgow at the same period they were practically never seen.

The second point of interest in the case is the extensive and dangerous paralysis which occurred. The paralysis began on the eleventh day of the disease when the palate became affected. Three days later there was slight and temporary laryngeal paralysis. The cardiac involvement began on the fourteenth day. Within twenty-four hours the child's condition was extremely critical, the heart becoming dilated, the heart sounds foetal in character, and the radial pulse almost inappreciable. After this, the cardiac condition improved somewhat, but remained for long very unsatisfactory. On the twenty-fourth day of illness paralysis of the pharyngeal muscles began, and by the next day swallowing was impossible. This paralysis continued till the fifty-fourth day of illness. I believe, although it is not stated in the report, that there was a degree of bilateral facial paralysis. This I say, because I remember well the patient's vacant expression at this period.

It is quite probable, also, I think, that there may have been some paresis of the limbs, but owing to the patient's critical condition this was not sought for.

The cardiac and pharyngeal condition necessitated the employment of rectal feeding. The child was fed by the

rectum, and by the rectum only, from the fifteenth till the thirty-seventh day of illness—that is, for twenty-two days. After this, for a further period of seventeen days, nasal feeds were employed. So that in all, the child was artificially fed for thirty-nine days. Considering the condition of the heart, and remembering the state of the kidneys, it is remarkable that the child's strength held out.

The third point of special interest in the case is the kidney complication. Albumen is constantly found in the urine of severe cases of diphtheria, and in many cases in considerable quantity; but it is rare to see such a large amount as was present in this case, and still rarer to find the albuminuria accompanied by general œdema. Only in one other instance in diphtheria have I seen general œdema occur, and the case was very similar to this one in its general features. I suspect that in such cases the cardiac condition is an important factor in the production of the œdema. No blood was present in this boy's urine at any time. I would remark that even in the hæmorrhagic cases, when there may be bleeding from all the other mucous surfaces, it rarely occurs from the membrane of the urinary tract.

So far, I have hardly referred to treatment. As regards the doses of antitoxin, in all 72,000 units were given. Doubtless many here will be much surprised at the large amount given. Personally, I have no hesitation in advising large initial doses in bad cases, for in my experience large initial doses act better than repeated small ones. I am, however, willing to admit that possibly my colleagues in the Western Hospital and myself erred on the side of excess.

Beyond the specific treatment in such a case as this, the all-important requirement is skilled nursing. I feel sure that this patient would not have survived if he had not had the advantage of being nursed by nurses accustomed to the management of such cases. For the successful carrying out of rectal and nasal feeding constant watchfulness is necessary. The rectal feeding in this case consisted in the giving of 4 oz. peptonised milk every four hours, and latterly the yolk of an egg was added occasionally. Benger's food was employed for the nasal feeding. During the period of pharyngeal paralysis the child's head and neck were kept constantly reclining over pillows. I would emphasise the necessity of this precaution whenever pharyngeal paralysis develops, to prevent choking from the accumulation of mucus. As to drugs, belladonna was used at times for the vomiting, and also with the view of lessening the flow of mucus from the throat. Brandy was

given regularly in drachm doses (four-hourly), and strychnine was used hypodermically at times.

In connection with this case, I should like shortly to refer to the relation between the severity of the initial attack in diphtheria and the occurrence of paralysis. This is a subject of much interest, and is one of moment both in relation to treatment and prognosis. It has been held by most authorities, up to quite recent years, that paralysis occurs quite as frequently, if in fact not more so, after a mild initial attack as after a severe. That this teaching is wrong I am quite convinced. There appeared in the *Practitioner* of November, 1904, an exhaustive and able monograph, by Dr. J. D. Rolleston, on "Diphtheritic Paralysis," in the course of which he says—"A not less disputed question is the relation of the subsequent paralysis to the character of the faucial involvement. The great majority of writers, *e.g.*, Greenhow, Squire, Mackenzie, Wilks, Gowers, See, and Trevelyan, are of opinion that there is no proportion between the two. Some, indeed, *e.g.*, Trousseau, admit that paralysis is more common after severe attacks of diphtheria, but that mild cases are by no means exempt. Hensch and Jacobi go so far as to say that mild attacks are more liable to be followed by paralysis than severe. A small but important minority, *e.g.*, Cadet de Gassicourt, Caiger, Goodall, and Woollacott, cling strongly to the directly opposite view, *viz.*, that severe attacks of diphtheria are more liable to be followed by paralysis than mild. . . . Similar testimony has been given me by other medical officers and nurses, who have been many years in the Board's service, and who have had many thousands of cases of diphtheria—the mildest, the most malignant, and all intermediate degrees—under their care."

DR. ROLLESTON'S TABLE.

Faucial Cases with or without Laryngeal Involvement.		Paralysis Cases, all kinds.	Per- centage.	Severe Paralysis Cases.	Per- centage.	
Class	I. Very severe, . . .	39	32	82.0	23	58.0
„	II. Severe, . . .	96	49	51.0	25	26.0
„	III. Moderately severe, . .	40	7	17.0	...	...
„	IV. Moderate, . . .	152	22	14.0	3	1.9
„	V. Mild, . . .	144	5	3.4	...	...
„	VI. Very mild, . . .	24	...	...	...	...
Total, . . .		495				

Dr. Rolleston's personal experience, as given in his paper,

shows undoubtedly that in the cases he reviews paralysis very much more frequently followed the severe attacks than the mild ones. I have heard it said, and I believe that it is true in great part, that in a ward of diphtheria patients, one experienced in the disease can pick out with considerable accuracy the cases that are likely to develop paralysis of any severity.

I have notes of a consecutive series of 116 cases which were under my own care in London, and I wish to lay before you the facts they bring out in relation to this question. A rough method of dividing these cases, and yet one which, I think, gives a fair degree of accuracy as to their relative severity, is by grouping them according to the total dosage of antitoxin they received. In explanation, I should say that my general routine was to give all mild cases 6,000 to 12,000 units of antitoxin as an initial dose; moderately severe cases, *e.g.*, those showing considerable faucial involvement, marked glandular, enlarged, &c., 18,000 units; very severe and malignant cases, 24,000 units and more. In cases not responding well the further doses were always given. The table I show you refers to the total dosage:—

	Cases.	All Cases of Paralysis.	Per- centage.	Severe Paralysis.	Per- centage.
Class I. 12,000 units and under,	92	11	11·9	2	2·1
„ II. 12,000 to 18,000 units,	27	7	25·8	1	3·7
„ III. Over 18,000 units,	47	21	44·6	10	21·2

These figures show that in this series of cases paralysis was much commoner after the severe attacks than after the mild.

I should like, finally, to emphasise one further point, *viz.*, that the severer the initial attack the more likely it is that the paralysis will be of a dangerous character. The paralysis which follows mild attacks of diphtheria is usually of a trifling nature, chiefly palatal or ocular, rarely is it of a grave type. On the other hand, the paralysis which follows the severe attacks is frequently grave, such as cardiac or pharyngeal.

The table shows this to be true of my cases. Class I shows 2·1 per cent to have developed severe paralysis, while in Class III, 21·2 per cent developed severe paralysis. Rolleston is very insistent on the constancy of the relation between the severity



of the initial attack and the character of the subsequent paralysis, and his table bearing on the point is very convincing.

That the opinion here expressed on this question does not accord with the usual teaching, I think you will recognise. Dr. W. Pasteur, in his article in Gibson's *Text-Book of Medicine*, says, "The degree of paralysis does not appear to be in any way related to the severity of the primary disease. . . . Some of the worst cases are met with after mild attacks of the primary disease." Dr. Samuel West, in his book on *Diseases of Children*, says, speaking of paralytic symptoms, "they have no relation to the severity of the previous attack."

While holding that the views of these authorities are wrong, it has to be admitted that severe paralysis does in rare instances follow on a mild primary attack. Dr. Rolleston inclines to the view that this is, at least, in some cases due to the patient being allowed undue liberty—not being strictly confined to bed—during the acute stage.

The paper was discussed by Drs. Middleton, Alex. Robertson, Tomkinson, Syme, and Wright, and the President. The discussion turned chiefly on the occurrence of paralysis in slight cases, and the treatment of paralysis by antiserum.

*(The report of this Meeting will be continued in our next issue.)*

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## GLASGOW EASTERN MEDICAL SOCIETY.

The opening meeting was held on 2nd October, 1907, when the President, Dr. John Patrick, gave a presidential address on "Some Symptoms of Acute Abdominal Diseases." The address appears in this issue at p. 30.

The second meeting was held on 16th October, the President, Dr. John Patrick, in the chair.

DR. R. M'C. SERVICE introduced a discussion on the "Notification of Births Act, 1907." He afterwards moved that the Society reappoint its delegates of last year, and ask the other societies to do likewise, the whole to form a deputation with power to approach the Health Committee of the Corporation and confer as to working of Act, if it should be adopted. This was agreed to.

The third meeting was held on 6th November, the President, Dr. John Patrick, in the chair.

1. DR. J. C. SYSON showed a child who had passed through an attack of meningitis, probably cerebro-spinal, and who was making a tolerable recovery. There seemed to be some loss of vision.

2. DR. BORLAND showed (a) a child who had been operated on for spina bifida; (b) a man who was recovering from lymphangitis of arm, and abscess of chest-wall, following on septic wound of thumb. The infection had not involved the cubital gland.

3. DR. JOHN PATRICK showed (a) a man suffering from traumatic hysterical monoplegia, with exaggerated knee-jerk and ankle-clonus and loss of sensation beyond the monoplegic area. The patient was in a spring-van, which collided with an electric car, and was thrown to the ground. He was able to take his horse home, but gradually developed the sensory and motor phenomena grouped under the above term. (b) A young woman with lividity, swelling, and coldness of left hand and wrist, resembling that found in Raynaud's disease. Careful x-ray examination excluded the presence of cervical rib. No other cause of pressure on the nerves could be detected. The diagnosis was made of traumatic peripheral neuritis, chiefly of ulnar distribution.

4. DR. M'KAIL showed a woman, aged 49 years, with a ganglion on tendon of flexor carpi ulnaris near wrist-joint, and similar swellings along ulnar border and on front of forearm.

*Dr. Alex. Robertson* was not prepared to class Dr. Patrick's first case as a hysterical one, in view of the exaggerated knee-jerks and ankle-clonus.

*Dr. Edington* noted some degree of hydrocephalus in Dr. Borland's case of spina bifida, but this had been present before operation. He had had a case which developed hydrocephalus after operation, and this was a disappointment which occurred in these cases. The present child also showed talipes calcaneus in left foot. In his opinion, Dr. Borland's second case was a mild form of pyæmia, and it was interesting to note the wide range of movement in the elbow-joint, notwithstanding grating had been obtained in it during the acute stage of the illness. Another interesting feature of the case was the absence of inflammatory signs in the cubital gland. In his experience, this gland usually escaped in cases of septic lymphangitis.

*Dr. Couper* thought that Dr. M'Kail's patient was suffering from multiple lipomata.

## REVIEWS.

*A System of Medicine by Many Writers.* Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., and HUMPHRY DAVY ROLLESTON, M.A., M.D., F.R.C.P. Vol. III. London: Macmillan & Co., Ltd. 1907.

THE present volume of the *System of Medicine* treats of general diseases of obscure origin, diseases of the alimentary canal, and diseases of the peritoneum. In the first group are included a considerable series of articular affections, most of which are dealt with by the very capable hand of Dr. A. E. Garrod. It is worthy of note that Dr. Garrod separates rheumatoid arthritis and osteo-arthritis from one another, and gives each an article for itself. The same writer discusses the infective diseases of joints. Some of the rarer lesions of bones are described by Dr. Batty Shaw and Mr. Bowlby, while the article on rickets is due to Drs. Cheadle and Poynton. Professor Rose Bradford has revised the original contributions of the late Sir William Roberts on gout, and of the late Dr. Ralfe on diabetes insipidus. Professor Saundby contributes the article on diabetes mellitus, while Dr. J. R. Stocker writes on sea-sickness, and Sir T. Clifford Allbutt on mountain-sickness.

As an introduction to the subject of diseases of the alimentary canal, we have two essays on the general physiology and pathology, first of secretion, and secondly of digestion. The former is the work of Professor Rose Bradford. The second was originally written by the late Dr. C. H. Ralfe and Dr. W. Soltau Fenwick, and has been revised by Dr. Fenwick. Diseases of the mouth are considered by Mr. Walter G. Spencer, and those of the œsophagus by Dr. Rolleston. Sir Lauder Brunton has undertaken the articles on dyspepsia and constipation, and is joint author with Professor Leith of the contribution on gastritis, and with Dr. Eustace Smith and Dr. Slater of the contribution on diarrhœa. Sir T. Clifford Allbutt writes on dilatation of the stomach, and on neuroses of the stomach and other parts of the abdomen. The articles on ulcer of the stomach and of the duodenum are the work of the late Professor Dreschfeld. Dr. Hale White writes on tumours of the stomach and on colic, and Dr. Rolleston deals with diseases of the small intestine. The important subject

of appendicitis has been allotted to Mr. Lockwood, while Mr. Barnard has written on intestinal obstruction.

Under the heading of diseases of the peritoneum we find the subject of shock discussed by Dr. T. G. Brodie. Chronic inflammation, tuberculosis, and new-growths of the peritoneum are all considered in articles by Sir W. H. Allchin, who has also, in association with Dr. F. W. Andrewes, written on acute peritonitis. Dr. T. D. Acland contributes the concluding article of this volume, which is on the very interesting and important subject of subphrenic and other forms of peritoneal abscess.

There is a coloured plate containing six excellent illustrations of morbid appearances revealed by the sigmoidoscope; and, in addition, a number of plain figures are included in the text.

The editors are to be congratulated, not only on the immense amount of important work which this large volume represents, but also on the promptitude with which they are able to issue the successive volumes of the *System*.

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*Nothnagel's Encyclopedia of Practical Medicine.* Diseases of the Intestines and Peritoneum, by Professor Dr. HERMANN NOTHNAGEL. Edited, with additions, by H. D. ROLLESTON, M.A., M.D., F.R.C.P. Second Edition, thoroughly Revised. Authorised Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D. London: W. B. Saunders Company. 1907.

IT must be particularly gratifying to the English editor, as well as to the publishers, that a new edition of this volume has been called for after such a short interval of years. Though the original work extended to considerably over a thousand pages, the increase in size involved in the revision has been but small. Those who appreciated the high qualities of the late Professor Nothnagel and his work will be glad to possess, as a memorial of the great clinician, a volume written by himself on one of those branches of medical practice to which he had given particular attention; but all physicians may look forward to a study of this book with the expectation of gaining much valuable knowledge of a thoroughly modern kind, as well as having excited in their minds a fresh interest in certain aspects of their daily professional work.

We heartily recommend this new edition to the notice of our readers.

*Manual of Bacteriology.* By ROBERT MUIR, M.A., M.D., and JAMES RITCHIE, M.A., M.D. Fourth Edition. With 171 Illustrations. Edinburgh and London: Young J. Pentland. 1907.

THOSE who follow the progress and literature of this department of pathology are aware of the gradual but steady unfolding of many erstwhile mysteries by the determined efforts of investigators. It will not, therefore, surprise them to find many substantial additions in the text of the work now before us.

It is five years since the last edition of this *Manual* was published, and a consideration of the contents of the new edition shows us that the authors have not spared themselves in bringing it abreast of the times. Thus we find reference to Ducrey's bacillus having been proved to be the cause of soft sore, and Lustgarten's bacillus is displaced from its former position in view of recent work on spirochætes. A very good review of this subject is given, and the authors consider that we have very strong presumptive evidence that in *spirochæte pallida* we have the true cause of syphilis. The transmission of this disease to animals and the work on immunity are also briefly noticed.

In the section on tuberculosis the work of Wright, and the principles underlying his views, are set forth.

There are considerable additions to the chapter on immunity, and we find that this most difficult subject is set forth in the masterly way which those of us who are familiar with the utterances of Professor Muir might have expected.

A chapter on trypanosomiasis is added to the appendix.

We congratulate the authors on this new edition, and we sincerely thank them for a volume which is indispensable to every member of the profession, be he student or practitioner, who has a true ideal of his work.

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*Modern Methods of Diagnosis in Urinary Surgery.* By EDWARD DEANESLEY, M.D. London: H. K. Lewis. 1907.

IN his preface the author tells us that "this little book describes the principal modern methods of localising and distinguishing those diseases of the urinary organs which are usually assigned to the surgeon."

There are four chapters, of which the first deals with the interpretation of urinary symptoms; the second, with abnormal conditions of the urine; the third, with the physical examination of the patient and of the urinary organs; and the last with the differential collection of specimens of urine.

We can heartily recommend the volume to all surgeons as one which is both interesting and instructive, and we congratulate the author on the way in which he has succeeded in his object.

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*Lehrbuch der Ohrenheilkunde für Aerzte und Studierende (Manual of Otology for Practitioners and Students).* In Thirty-two Lectures. By DR. FRIEDRICH BEZOLD. With 75 Illustrations and 1 Table of Diagrams of the Tympanic Membrane. Wiesbaden: J. F. Bergmann. 1906.

IN this work the first nine lectures are devoted to general considerations, such as the anatomy and physiology of the organ of hearing, the methods of examining the ear, and of testing the hearing, &c. The remaining twenty-three lectures form the special part wherein the diseases which affect (1) the external, (2) the middle, and (3) the internal ear are described. The author presents clearly and concisely, in a volume of moderate dimensions, the results of his own practical experience, gained during twenty-five years of constant and painstaking work. The value of such a contribution from a recognised master of his subject cannot be overestimated. The name of Bezold is associated very intimately with the modern developments of the use of tuning-forks—and more especially of the continuous tone series—as an aid to the differential diagnosis of certain ear affections. By the use of such a series of forks defective hearing for low tones, which is generally observed in otosclerosis and in other middle-ear affections, and, on the other hand, the deficient perception of very high notes (as is usually the case in labyrinthine or auditory nerve affections) can be strikingly demonstrated. Chapters VIII and IX, in which this subject is very ably handled, are most instructive, and presenting as they do the conclusions of one who has with such thoroughness pursued this line of investigation, may be regarded as authoritative. The chapter (XXVI) upon otosclerosis contains within the scope of eight pages practically all that is known of this, so far incurable, form of deafness. This is one of the most interesting chapters, and deserves careful study.

In dealing with suppurative inflammations of the middle ear the author has not seen fit to include descriptions of the technique of the important operations in connection with the treatment of otitic intracranial complications.

The chapters on diseases of the internal ear have been written by his pupil, Professor Siebenmann, of Basel, but have been revised and brought into conformity with the rest of the book by Bezold himself.

We would only venture to criticise adversely what we consider, taking the title into consideration, the undue prominence and space given to certain points which, although interesting, are of minor importance. For example, more than two pages are devoted to a description of the light reflexes of the tympanic membrane; whereas, inflation of the middle ear by Politzer's method, a most valuable diagnostic and therapeutic measure, is dismissed in less than a page.

We can heartily recommend this work, not only to students and general practitioners, but also to specialists, who will find in it much that is original and suggestive, coming from one of the most outstanding of the continental otologists. We hope it will ere long be followed by an English translation.

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*Operative Gynecology.* By HOWARD A. KELLY, A.B., M.D., LL.D., F.R.C.S. Hon. Edin. Second Edition, revised and enlarged. London: Sydney Appleton. 1906.

MORE than eight years ago we welcomed the appearance of the first edition of this large and attractive book. In this edition the main characteristics are the same. It is still a record of personal experience and of personal modes of operation, rather than a treatise on systematic or operative gynaecology.

It comes to us with the same beautiful illustrations and type. New illustrations have been added; the subjects have been rearranged; there are one or two new chapters, of which we would note one—only too short—on gynaecological affections in children, by Dr. Elizabeth Hurdon; and the author indicates some slight changes in technique, especially his adoption of rubber gloves for operative work.

But the merits of the book (which are many) and the demerits (which are comparatively few) remain very much as before, and it can be strongly recommended both to specialists in gynaecology and surgery and to the general practitioner who desires to

understand the present position of surgeons with regard to diseases of the female pelvic organs.

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*The Eye and Nervous System: Their Diagnostic Relations.*

By Various Authors. Edited by WM. CAMPBELL POSEY, A.B., M.D., and WILLIAM G. SPILLER, M.D. Illustrated. London: J. B. Lippincott Company. 1906.

THIS large volume of nearly a thousand pages is the work of a score of contributors in addition to the editors; and the names of some of these are so representative of the sound work that has been done in recent years in the United States as to assure for this treatise a genuine welcome and careful attention. No man can be a master either in neurology or in ophthalmology without knowing a good deal of both subjects, and the present work is intended to furnish us with an account of the two subjects so far as they are connected with one another.

Professor Spiller writes on the cranial nerves; Dr. Souter on the eye; Dr. Chas. K. Mills on the psychology of vision and the focal diseases of the visual cortex; Dr. Casey Wood on the examination of the eye and on blindness; Drs. Duane and Weeks on the ocular muscles; Dr. Edward Jackson on affections of the fifth, seventh, and sympathetic nerves; Dr. Würdemann on diseases of the retina and optic nerve; Dr. Spiller on tumours of the brain; Dr. E. W. Taylor on bulbar and pseudobulbar diseases; Dr. William Hirsch on arteriosclerosis, multiple sclerosis, Friedreich's disease, and paralysis agitans; Dr. Dercum on parasymphilitic affections, insanities, and toxic encephalopathies; Dr. B. Sachs on amaurotic family idiocy and other infantile cerebral palsies; Dr. Chas. W. Burr on abnormalities in the development of the brain and skull, and on acromegaly; Dr. Weisenburg on diseases of the spinal cord and spinal nerves; Dr. de Schweinitz on neuroses and psychoses; Dr. James H. Lloyd on migraine, tetanus, &c.; Drs. Risley and Hansell on the effects of refractive errors; Dr. Posey on exophthalmic goitre, and on the psychological effects of operations on the eyes; Dr. Chas. H. Frazier on the surgical treatment of intracranial lesions; Dr. Joseph Sailer on tremors, reflexes, and gaits; and Dr. G. L. Walton on degeneracy.

This short summary of the contents will help to show the great variety of subjects which are treated in this volume, and



should appeal to all scientific physicians and ophthalmologists; while the names of the editors and the list of contributors will prepare the reader for a masterly handling of the whole question. The coloured plates and other illustrations are a distinct addition to the value of the work.

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*Refraction of the Eye: Its Diagnosis and the Correction of its Errors.* By A. STANFORD MORTON, M.B., F.R.C.S.Eng. Seventh Edition. London: H. K. Lewis. 1906.

WE welcome the appearance of this new edition of Mr. Morton's well-known book, and are of opinion that it is admirably adapted as an introduction to the study of refraction testing. Its aim is essentially to give practical instruction as to the methods which should be followed in diagnosing and estimating hypermetropia, myopia, the various forms of astigmatism, &c.

The author scarcely touches on the subject of optics, physical or geometric; but contents himself with giving a description of the processes of measuring the different errors. It is an excellent book for the beginner, although, of course, the specialist must go a great deal further.

The present edition contains a chapter on heterophoria, which cannot but enhance the value of the volume.

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*The  $\text{CHCl}_3$ -Problem.* By RICHARD GILL, B.Sc., M.B., B.S. Lond.Univ., F.R.C.S.Eng. Two Vols. Edinburgh and London: Wm. Blackwood & Sons. 1906.

THIS somewhat iconoclastic work is worthy of the consideration of everyone interested in the scientific aspect of chloroform anæsthesia. It is contained in two small volumes, the first entitled "Analysis," the second "Physiological Action." In a somewhat lengthy preface the author passes under review all the data having a bearing on the investigation which he has undertaken, and in an introduction extending to 160 pages he critically examines the "commonly received  $\text{CHCl}_3$  hypothesis." The weak points in this hypothesis, as applied to the different phenomena occurring during chloroform action, are ably set forth by the author, who asserts that erroneous conclusions have frequently been arrived at because the "explanation is framed so as to fit in with the evidence." In

running counter to the commonly accepted hypothesis, Mr. Gill alleges that observers have not always been careful to discriminate between results which may be attributed to the action of chloroform directly and exclusively and those caused by other agents acting simultaneously with chloroform. He says there is a "tendency to explain all phenomena appearing in the course of  $\text{CHCl}_3$  action as the results of it. . . .", and we are disposed to agree with him. With regard to the causation of abnormal states during the administration of chloroform, the author insists on its extreme complexity, such factors as the quality of the chloroform used, the nature of the surgical procedure, mechanical obstruction to breathing and other abnormalities in the state of the air-way, tending to complicate the problem. As Mr. Gill puts it, "to mistake a complex for a simple result is to introduce a fundamental error into all inferences that may be derived from it." The rest of the work is devoted to the working out in detail of the author's solution of the problem. In Part I the "Parts on which  $\text{CHCl}_3$  acts" are dealt with, and this is followed by a chapter in which the bearings of the " $\text{CHCl}_3$  factor" on the problem are discussed in detail. Parts IV and V are devoted to the consideration of "The theory of the physiological action of  $\text{CHCl}_3$ " and "Experimental investigation" respectively.

While this work is chiefly of academic interest, it is not devoid of practical suggestion. For example, the author emphasises the importance of administering a much diluted vapour during induction of anæsthesia, and subsequently using the minimum amount of chloroform. He attributes many of the unpleasant after-effects of chloroform action to the presence of an excess of  $\text{CO}_2$  in the blood, the result of administering large quantities of the anæsthetic. Mr. Gill has marshalled his facts in an able and convincing manner, and has produced a work which will amply repay a careful perusal. Each volume is furnished with a useful index.

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*Davos as a Health Resort.* A Handbook containing Contributions by A. F. BILL, M.D., and Eleven other Writers; with Introduction by W. R. HUGGARD, M.D. Davos: Davos Printing Company, Limited. 1906.

A PLACE that can attract 20,000 visitors annually is worthy of a careful description from the medical point of view, and it gets that description from the different contributors to this

volume. Davos is portrayed in its historical, topographical, climatic, physiological, therapeutic, residential, and other aspects. There are about fifty illustrations of localities and buildings. Some of the pictures are coloured, those of the flora being nice.

A patient contemplating a visit to Davos would do well to read this book, or have its substance conveyed to him, in order to be informed of the best modes of travelling, the prices of accommodation, and the sports and pastimes of the health resort. The long but useful chapter by Dr. Phillipi, on "Indications and Contra-indications," should be read specially by medical practitioners. Patients with heart disease or advanced consumption are advised not to go to Davos, and likewise persons with severe renal disorders are recommended to stay away. Candour in a guide-book is a high quality.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

### M E D I C I N E.

**The Diagnosis of Cerebro-Spinal Meningitis by Cultures from the Blood.** By J. M. Birnie, M.D., and M. T. Smith, M.D. (*Amer. Journ. of Med. Sciences*, October, 1907).—Up to the present time only eight cases have been reported in which the diplococcus intracellularis meningitidis has been found in the general circulation. Birnie and Smith obtained the organism in pure culture from the blood of a girl, æt. 15, on the sixth day of illness. The organism was also found in the fluid withdrawn by lumbar puncture. Five days later, the patient's opsonic index to the diplococcus obtained from the blood was 100 per cent, and she was given 0.5 c.c. of a "personal vaccine" standardised of 20,000,000 to the cubic centimetre. Next day the temperature fell, and the patient was brighter. Four days later the opsonic index was 172 per cent. Temperature fell by lysis, and her recovery was uneventful.—ARCH. W. HARRINGTON.

**The Examination of the Fæces for Occult Blood, with Special Reference to the Value of the Benzidin Test.** By Edward H. Goodman, M.D. (*Amer. Journ. of Med. Sciences*, October, 1907).—The author uses the benzidin test of O. & R. Adler as modified by Schlesinger and Holst. The following is the method:—

1. A concentrated solution of benzidin is made, by using as much benzidin as will go on the end of a knife, in about 2 c.c. of glacial acetic acid. The benzidin is readily soluble.

2. A small piece of fæces, about the size of a pea, is taken up on a glass rod, and suspended by stirring in a test-tube one-fifth full of water. The test-tube is closed with cotton-wool and the mixture boiled.

3. Ten to twelve drops of the benzidin solution are poured into a test-tube, and 2.5 to 3 c.c.  $H_2O_2$  (3 per cent) added.

4. To this are added 1 to 3 drops of the boiled fæces, and the tube is shaken slightly to aid the mixing process.

In the presence of blood the colour becomes green, blue-green, or blue, the blue being more pronounced the more blood is present. Slight amounts show a reaction in one quarter to one half minute, and very small amounts always within two minutes. After five to fifteen minutes the colour becomes a dirty dark red violet, and remains so. Negative tests show no change even after standing twenty-four hours. Goodman prefers to grind the fæces with distilled water, and examine a boiled portion of this. While the boiled portion is cooling, a concentrated solution of benzidin solution is made by dissolving, in 3 to 5 c.c. of glacial acetic acid, as much benzidin as is contained in a very small spoon spatula. One c.c. of this is poured into a test-tube, and about 3 to 10 drops of the boiled fæces solution, further diluted with an equal quantity of water, are added, and the two shaken. To this are now added 1 to 3 c.c.  $H_2O_2$  (3 per cent), and the mixture is shaken.

The guaiac and aloin tests have been found to be about equal in sensitiveness, and both respond to blood in the dilution of 1 to 25,000, while the benzidin test is positive in a dilution of 1 to 200,000. In the use of the test several precautions must be borne in mind. Only Merck's benzidin puriss. should be used. Care must be taken to avoid excess of  $H_2O_2$ , which may cause disappearance of the colour. Not more than 2 c.c. of a 3 per cent solution should be used.

The following substances give a positive reaction with benzidin:—Oxydising ferments, animal as well as vegetable (readily destroyed by boiling); iron salts, pus, saliva, nasal secretion, bowel detritus, and mucus give a more or less positive reaction; potassium iodide, pure animal charcoal, metallic iron, platinum, and copper in all forms. The test-tubes must, therefore, be scrupulously clean.

Goodman examined the fæces in 100 cases, making 129 examinations, and using the guaiac, aloin, and benzidin tests. From these studies he advises first a test of the fæces with benzidin; if negative, we may be sure of the absence of blood, and need go no further. If, on the other hand, the test is positive, the aloin and guaiac tests should be tried; and if these are negative, occult blood may be regarded as being absent. A substantiation of the benzidin test by either the aloin or the guaiac test indicates the presence of blood. The extreme sensitiveness of the benzidin test thus makes it a valuable negative test.

Trial was also made of the test on gastric contents and urine. Schlesinger and Holst advise taking 10 c.c. of urine, and adding 1 c.c. glacial acetic acid. Invert twice, then add one-third volume of ether, and shake well. After allowing to stand for a short time, add 5 to 10 drops of absolute alcohol, and shake gently. Separate the ethereal extract, and test as usual. They say the benzidin test is five times as sharp as the guaiac or aloin tests, and prefer it in testing urine for blood. Goodman also recommends it.

—ARCH. W. HARRINGTON.

**The Use of Ammonium Oxalate in Blood-Culture Technique.** By Albert A. Epstein, M.D. (*Amer. Journ. of Med. Sciences*, Sept., 1907).—This method is suggested with the view of simplifying bedside procedure, and doing away with the necessity for immediate distribution of the blood in the various media employed. The solution used consists of ammonium oxalate 2 grms., sodium chloride 6 grms., and distilled water 100 c.c. It is distributed in large test-tubes in quantities of 10 c.c. each, and sterilised on three consecutive days for twenty minutes at a time. The tubes are stored in the cold, and filled with fresh solution every three or four weeks.

The steps of the method are:—(1) About 10 c.c. of blood are withdrawn from a chosen vein, and (2) introduced into a tube containing 10 c.c. of the sterilised ammonium oxalate solution. (3) The mixture is then thoroughly shaken, or

poured into a sterile tube. It is then taken to the laboratory and examined by any of the ordinary blood-culture methods.

The author has employed this method, using the ordinary method as a control in 78 cases. The results obtained by the ammonium oxalate method have been the same as with the controls. The bacteria encountered in the positive cases were the pneumococcus, streptococcus, staphylococcus, bacillus typhosus, and bacterium coli. Further studies are being carried on with regard to the application of the method to the attenuated organisms, such as those of subacute endocarditis.

In addition to the ease in taking cultures, the oxalated blood may be centrifuged, and smears from the deposit may be examined microscopically for bacteria. The supernatant fluid can be used for determination of the opsonic index.—ARCH. W. HARRINGTON.

**Chylous Ascites and Chylous Pleurisy in a Case of Lymphocytoma involving the Thoracic Duct.** By George Dock, M.D. (*Amer. Journ. Med. Sciences*, November, 1907).—The patient, a man aged 59, was admitted to hospital on 1st October, 1906, on account of an abdominal tumour and ascites. In December, 1902, he had been seen by Professor de Nancrède, who found "a mass extending from the ribs on the left side nearly to the inguinal canal, and from the right nipple line to the left mid-axillary line. The mass was freely movable; it had a blunt edge on the left side, and several notches in the lower edge. The mass seemed to be made up of three or four polyp-like projections." Soon after this the glands of the neck, groin, and axilla became enlarged. A year ago increase in the size of the abdomen became marked, and there was great dyspnoea. The abdomen was aspirated in August and September, 1905, and six and nine quarts respectively of pink, opaque, milky fluid were withdrawn. Large quantities leaked through the punctures. On admission to hospital six litres of similar fluid were removed. There was slight enlargement of the cervical, axillary, and inguinal glands. Dulness was present over the right lung as high as the fourth rib. The veins of the arms, thorax, and abdomen were dilated. There was a hard nodular mass in the left side, extending from the right of the navel to the left posterior axillary line, and from the margin of the ribs to the left iliac fossa, filling the latter. The surface was smooth generally, but with some large prominences. The edge of the liver could just be felt, but the spleen was not palpable. Free fluid was present in the abdomen. The urine presented nothing abnormal. Blood:—Flow rather sluggish; colour dark, watery; erythrocytes, 4,390,000; leucocytes, 8,651 per c.mm.; hemoglobin, 70 to 80 per cent.

One of the enlarged axillary glands was removed for examination, and found to be lymphocytomatous (lymphosarcomatous); 2,450 c.c. of thin, milky, slightly pink fluid, were removed by tapping; specific gravity, 1,014; reaction amphoteric to litmus, acid to phenolphthalein. The fluid contained 3.5 per cent of fat. Similar fluid was removed from the right pleural cavity.

The patient gradually sank, and died on 1st January, 1907. The autopsy was performed by Dr. A. S. Warthin, and his pathological diagnosis was:—Chylous ascites, pleural effusion, lymphocytoma of mesenteric and retroperitoneal glands. Obstruction of thoracic duct by tumour mass continuous with mesenteric tumour. Lymphocytoma infiltration, and secondaries in all organs. General atrophy and passive congestion. Lymphoid hyperplasia of bone marrow.

The case does not appear to be very different from one of multiple sarcoma, or malignant lymphoma, or lymphosarcoma of other writers, but the differential count of the blood shows certain points of interest. In counting 652 leucocytes the lymphocytes formed 69.8 per cent; large mononuclear and transitional, 7 per cent; polynuclear, 27.4 per cent; eosinophile, 1.3 per cent; basophile, 3 per cent. It was difficult to group the lymphocytes into large and small. They showed distinct leukemic features. The large

mononuclears were few, with large bodies, pale round oval or irregular nuclei, and very pale protoplasm. The polynuclears showed considerable variation in size, up to twice the normal, with nuclei usually proportionately large. There were no very small ones. The granules stained well. The eosinophile cells were all polymorphonuclear, and of normal size. The basophile cells were polymorphonuclear, and of medium size. Only well preserved cells were counted. Many degenerate cells, apparently all of lymphocyte origin, were seen—45 to 50 of all others.

The sediment of the ascitic and pleural fluids showed lymphocytes almost entirely. The lymphocytes had the same characters as those of the blood. A very few larger cells of endothelial origin were seen, with few vacuoles or other degenerative features, and with deeply staining nuclei, and slightly basophile protoplasm.—ARCH. W. HARRINGTON.

## SURGERY.

**Perichondritis of the Larynx Occurring in the Course of Typhoid Fever.** By H. S. Birkett and H. S. Muckleston (*Montreal Med. Journ.*, August, 1907).—The case reported was that of an Austrian Pole, aged 21 years, who had been in Canada for a little over a year. He had a severe attack of typhoid, had bronchitis, repeated epistaxis, and broncho-pneumonia; also intestinal hemorrhages, and subcutaneous abscesses. He was admitted to hospital on 31st October, 1906, and laryngeal symptoms developed early in December, with hoarseness and noisy breathing. Three days after these symptoms appeared an acute perichondritis of the larynx, with involvement of the crico-arytenoid joints, was found on examination; the left cord was fixed and ulcerated, the right limited both in abduction and adduction, and the false cords were oedematous. On the sixth day of the laryngitis tracheotomy had to be carried out on account of the urgent inspiratory distress and rapidly deepening cyanosis. Convalescence was uneventful, but the patient was altogether 116 days in hospital, his residence being prolonged by the various complications, and particularly by the tracheal dressings. He was discharged wearing his tracheotomy tube.

In April the cords were still fixed in adduction, but were hidden posteriorly by a smooth globular mass, of grey colour, adherent to the left arytenoid cartilage. Six weeks later this had contracted distinctly, but the rima glottidis was still greatly narrowed, and nothing larger than a laryngeal probe could be passed under local anæsthesia.

On 20th May, as the patient urgently desired to be able to discard his tracheotomy tube, the trachea and larynx were examined (the former under a general anæsthetic), the tracheal lumen being found narrowed by granulations along the track of the tracheotomy tube, and the vocal cords adherent in their anterior half, but slightly movable posteriorly. It was thought inadvisable to carry out any further operative treatment for the relief of the stenosis, and the patient was advised to continue wearing the tube.

—ARCHIBALD YOUNG.

**Molluscum Contagiosum.**—W. E. Nelson (*Montreal Med. Journ.*, August, 1907), after describing a case, gives a short review of the subject. The condition was first described by Bateman in 1817. The name given by him is still retained, though many pathologists question the contagious nature of the condition. Other descriptive terms, such as sebaceum, epitheliale, verrucosum, have been employed. The growths are usually multiple. A single one is rare (Jacobs). Hutchison described them as like "mother-of-pearl shirt-buttons"—from their round shape, flat top, and central depression, with a small

aperture leading into the interior, from which whitish cheesy matter can be expressed. They are usually sessile, rarely pedunculated, and have a white or pink colour. The common sites are the eyelids, neck, chest, genitalia, and about the anus. Abrahams and Fox have reported their occurrence on mucous membranes (tongue). Balzer and Alquier report a case where the sole of the foot was affected in a boy. Most authorities regard the palms of the hands and the soles of the feet as exempt; this fact is advanced in favour of the view that they are of a sebaceous nature, sebaceous glands being almost entirely absent from these sites (Hutchison and Vidal). They are usually small, exceptionally may reach size of an orange, and may be mistaken for malignant growths.

They occur oftenest in the young, and poverty is a predisponent. In favour of the contention that they are contagious are such facts as the following:—(1) Their occurrence in several members of the same family; (2) epidemics in asylums—one case in an infant asylum was followed by over forty cases more within a year (Allen); (3) a case has been reported by Dubois-Havenith of transmission from a suckling to the mother; (4) Morris has reported the occurrence of six cases from the same Turkish bath; (5) Vidal and Pick have reported a number of accidental and successful experimental inoculations—Stelwagon gives the incubation period in cases of accidental inoculation as from ten days on, and from experimental inoculation up to twelve weeks.

The origin of the growths has been variously regarded as due to (1) abnormal growth of sebaceous glands (Rokitansky, Hebra, Hutchison, and Vidal); (2) growth from a hair follicle (Virchow); (3) "two or three down-buddings of the rete Malpighii" (White and Robey). Regarding the first of these views, Caspary pointed out the fact that in ordinary sebaceous glands no such structure was to be found; Boeck states that chemical and physical tests failed to demonstrate any fat in the cells of the growths; and Bizzozero and Manfredi found the bodies quite insoluble in hot ether or acetic acid.

Virchow regarded the condition as due to a peculiar degeneration of epithelial cells, and likened these to swollen starch grains. He considered the growths to be examples of a lobulated granular epithelioma.

Renant accepted the sebaceous origin of the growths, but regarded the "molluscum bodies" as produced by a hyaline degeneration in the perinuclear cell protoplasm. Geber states that they are due to a hyaline degeneration of a hyperplastic growth of the interpapillary rete cells. Unna explains the "bodies" as resulting from a colloid or hyaline degeneration, and uses the name epithelioma contagiosum.

Weisser and others considered the "bodies" to be coccidia developing in the epithelial cells. Benda considered them parasitic, though he believed that in some cases they arose from hair follicles.

White and Robey made a very thorough investigation into the condition, but were able to find no bacteria in the sections, though cultures yielded staphylococcus epidermidis albus. The "bodies" they regarded as due to "a very extraordinary metamorphosis of rete cells into normal keratin." They state that "nobody has demonstrated up to this time any parasitic body in the growth, and the change is not a colloid or a hyaline degeneration, but extraordinary metamorphosis into keratin."

[It is obvious that not yet can it be said that the origin, the exact nature, the contagiousness, the meaning or mode of production of the molluscum bodies, or the pathogenesis of the condition have been in any substantial measure established.—A. Y.]

The diagnosis is simple. They may be recognised by their characteristic shape, size, and situation, their "pearly" appearance, central depression, and small central opening. They may disappear spontaneously, or they may suppurate and break down.

Their removal is likewise simple—cauterisation, touching with pure carbolic acid, curetting, or excision.—ARCHIBALD YOUNG.

## DISEASES OF THE EAR.

**Vertigo and Disturbance of Equilibrium in Non-suppurative Diseases of the Internal Ear.** By Dr. Wittmaack (*Archives of Otolaryngology*, October, 1907).—The clinical observations of aurists, coupled with the advances in operative surgery as applied to the auditory apparatus, have in the main confirmed the experimental investigations of physiologists, and it can be assumed as definite that, when the cochlea is destroyed, complete deafness results, and that injuries and irritation of the semicircular canals always produce distinct disturbance of equilibration.

Short of the disturbances in the semicircular canals of the severe type, spoken of as "Ménière's disease," slighter degrees of functional disturbance may be discovered by careful examination, which, when associated with nerve deafness, may be regarded as definite signs of disease of the labyrinth. The difference in the intensity of the symptoms can be explained by the difference in severity of the fundamental pathological process. The lesions may be in the form of small hæmorrhages, or inflammatory exudates within the membranous labyrinth, or serous exudates in the peri- or endo-lymphatic cavities of the entire labyrinth.

The presence of extravasation of blood throughout the entire labyrinth, which was formerly regarded as the cause of Ménière's disease, is only possible, the author thinks, from traumatism, with fracture of the labyrinth capsule.

In diagnosing labyrinthine disease, there should be a functional disturbance in sound-perceiving, as well as in the apparatus for preserving the equilibrium.

The diagnosis of an affection of the sound-perceiving apparatus depends on the relatively good perception for deep, decidedly poorer perception for high, tuning-forks by air conduction, good lower-tone limit with marked contraction of the upper limit, diminution of the perception for the tuning-fork by bone conduction, and a positive Rinne.

He thinks that the galvanic reaction of the auditory nerve is useful, and that a positive reaction, with a low-current intensity, confirms the diagnosis of disease of the internal ear.—WALKER DOWDIE.

**Serous Mastoiditis.** By A. Courtade (*Archives Internationales de Laryngologie, d'Otologie et de Rhinologie*, September-October, 1907).—Probably most aural surgeons have mentally noted the existence of a serous mastoiditis due to middle-ear suppuration or to a simple catarrh, but the fact, as the writer of the article states, that little or nothing has been written about it, is no doubt due to the difficulty—as is also the case in serous meningitis—of demonstrating the condition. Courtade gives detailed notes of three cases. In two there was acute middle-ear suppuration, in the other there had been an acute middle-ear inflammation, or suppuration, which, however, had not led to perforation. There were in all three the usual signs of mastoid involvement. In one case, operation was several times urged but always refused in spite of the appearance of other grave symptoms—vertigo, vomiting. All the symptoms, however, disappeared by the spontaneous escape from the ear of a quantity of clear, oily-looking fluid, which had probably been dammed back by a small plug of thick pus which escaped at the same time.

The other two cases were not so serious, and the diagnosis was made by the aid of suction with a Siegle speculum. In one case a paracentesis was performed, and, following the rarefaction of the air by the speculum, a flow of clear fluid resulted which almost filled the speculum. This fluid continued to escape for thirty-six hours. In the third case no paracentesis was required as there was already a large perforation, and a result similar to that in the previous cases followed the use of the Siegle speculum.



Courtade gives it as his opinion that serous mastoiditis is more common than is supposed, or than might be inferred from the paucity of the references to it, and with this, as has been said, many will agree. He pleads for the use of aspiration in the treatment of middle-ear suppuration, and, as a matter of fact, this method is already growing in favour. He also states that during the procedure of opening the mastoid he has several times observed an escape of clear liquid, or of liquid only coloured by blood, which observations are of interest in reference to the subject of this communication.

The general conclusion is that operation is not always necessarily called for because signs of mastoid involvement have appeared in the course of a middle-ear suppuration. How often this fact presents itself to us clinically!

—W. S. SYME.

**Aseptic Meningeal Effusion with Intact Polynuclears in Suppurative Otitis Media.** M. Rist, in the *Bulletin de la Soc. Méd. des Hôp.*, 25th July, states that in a series of examinations of the cerebro-spinal fluid, obtained by lumbar puncture from children suffering from meningitis secondary to chronic otitis media, he found in the majority that microbes were absent, although the fluid was purulent and contained abundant polynuclears, as in typical cerebro-spinal meningitis. In some cases where an autopsy was made, a localised patch of purulent meningitis containing the ordinary bacteria of aural infections was found in the temporal region, while the rest of the cerebro-spinal meninges was in a state of congestion, due, the writer thinks, to the action of toxins.

E. D. Massary and Pierre Weil (*Bulletin de la Soc. Méd. des Hôp.*, 11th October) give the report of a patient with meningeal symptoms. About three weeks after the first symptoms of illness there was a free discharge of pus from one ear. Lumbar puncture repeatedly yielded a puriform liquid, containing almost exclusively intact polynuclears, but in which no bacteria were ever found.—W. W. CHRISTIE.

**Affection of the Auditory Apparatus Consecutive to Mumps in an Adult.** By Haig (*Archives Internationales de Laryngologie, d'Otologie et de Rhinologie*, May-June, 1907).—It is well known that deafness is occasionally got as a consequence of mumps, but as this latter disease is, in the main, an affection of childhood, it only rarely happens that the aural complication in the adult can be submitted to careful examination. The present case was that of a woman. On the ninth day of her illness, both sides being affected, she noticed herself getting deaf, and within thirty-six hours she became completely deaf in both ears. The deafness was accompanied by tinnitus, and short attacks of vertigo and pain of short duration. Otoscopic examination showed injection of Shrapnell's membrane, and of the postero-superior quadrant of the membrana propria on both sides, the left showing the appearances more markedly. Hearing for loud speech was abolished on the left, and almost abolished on the right side.

Tuning-fork tests showed abolition of osseous conduction for all notes. Air conduction was very much diminished for low notes, and not quite so much for high notes. Politzerisation resulted in no improvement, but massage of the tympanum led to a decided increase in the hearing. Progressive improvement followed injections of pilocarpine till, at the end of four weeks, the patient heard ordinary speech at eight yards, and osseous conduction returned, though not to its normal extent. Haig is inclined to give to the pilocarpine the credit for the improvement, though it is evident that a spontaneous cure of an acute affection, even of the internal ear, may occur. At the same time the prognosis of this complication of mumps is not very hopeful.

—W. S. SYME.

**Osteomyelitis and Deafness.** By Siebenmann (*Révue Hebdomadaire de Laryngologie, d'Otologie et de Rhinologie*, 13th July, 1907).—This

interesting communication has reference to the onset of deafness in osteomyelitis of other bones than the temporal. As the author says, there are a small number of general infectious diseases which produce deafness without involving the middle ear. This is the case sometimes with osteomyelitis. The deafness is usually bilateral and profound, and though a slight improvement may occur in one or both ears, even this is unusual. The auditory phenomena develop as a rule late in the disease, or during the period of convalescence, and in patients who have been old enough to remark it, tinnitus and vertigo have preceded the deafness. As to the exact pathological condition in the ear, Strinbrügge found, on *post-mortem* examination, changes in the labyrinth such as one gets in purulent labyrinthitis with meningitis, which, however, may have been secondary to the septic meningitis, and not a true metastasis, as the author suggests. In other cases, no doubt, the aural condition is a neuritis.

Since osteomyelitis is chiefly an affection of childhood, its influence in producing deafness is of interest in relation to acquired deaf-mutism.

—W. S. SYME.

**A Case of Acute Labyrinthitis due to Meningitis.**—Dr. Yearsley, in the *Archives of Otology* for October, 1907, reports a case which, he thinks, falls under this category. When two years old the patient (now 24) had a serious illness, accompanied apparently by severe headache. He had made no attempts to speak until he was fully three years of age. Both tympanic membranes were normal, and showed good mobility to the pneumatic speculum, and there were no abnormalities in the upper air-passages. Careful examination showed that he was absolutely deaf on the right side, while with the left ear he heard the voice at a distance of 9 inches; a whisper could not be heard on either side; and by the tuning-fork serious impairment of the left nerve was demonstrated.—WALKER DOWNIE.

## DISEASES OF CHILDREN.

**Sero-Fibrinous Pleurisy in Infants and the Sign of the "Sou."** By Dr. J. Brudzinski (*Archives de Médecine des Enfants*, September, 1907).—In this paper, which deals with the relative frequency of purulent and serous pleural effusions in infants, much space is devoted to the description of a new physical sign called the "Signe du Sou." This sign is elicited in the following manner:—Over the suspected part of the thorax a "sou" is placed, and gently tapped with another, while the physician auscultates at a corresponding level on the opposite side, and appreciates the sound as it is conducted through the thorax. Thus, if one suspects a pleurisy at the right apex in front it is over this one percusses with the coins, and it is over the right apex behind that one auscultates. In examining axillary conditions one auscultates on the same side of the chest and at the same level, but close to the vertebral column, in order to bring as great a thickness of lung as is possible between the point percussed and the point auscultated. The author advises the idle ear of the observer to be closed with the finger so as to make the differences in note more apparent. He also says it is advisable to compare the notes obtained at different levels. In the case of normal lung the note is dull and entirely devoid of all metallic tinkle, but if there is an effusion the note has a distinct metallic tone, and if much fluid be present it is almost silvery in its character. In the case of pulmonary consolidation, on the other hand, the note is even more dull than that found on examining normal lung.

This sign, the author considers, at least in children (adults are not mentioned), pathognomonic of pleural effusion, and more reliable even than exploratory puncture, which, though having the special qualification of differentiating between purulent and serous effusions, may, as is well known, often miss an

encysted pleurisy. With the aid of this sign he has in many instances been enabled to detect pleural effusions in the axillary region, and has verified his diagnosis by exploratory puncture.

It is as a result of the use of this sign and exploratory puncture in a large series of cases that he doubts the truth of the general opinion that in children purulent effusions are commoner than serous.—LEONARD FINDLAY.

**Rumination in a Girl, aged 3 Years.** Dr. J. Comby (*Archives de Médecine des Enfants*, July, 1907).—The child, whose parents were neurotic but did not suffer from merycism, was born at full time, and enjoyed good health until the age of 1 year, when she contracted whooping-cough complicated with gastro-enteritis. Later she suffered from constipation alternating with attacks of muco-membranous colitis. It was only about three months prior to her coming under observation that she was first noticed to bring back her food into the mouth. This occurred invariably a few minutes after finishing a meal, and was unaccompanied by any effort or pain. The food, after further mastication, was swallowed again, and in the case of dessert and dainties with evident pleasure. She was encouraged by her mother to spit the food out, but this she refused to do. This rumination would last for about two hours, during which time there was emitted from her mouth a disagreeable sour odour. The child was constantly in a state of hunger. Her general health was, however, good.—LEONARD FINDLAY.

**On Radiography in Pneumonia in the Infant.** By M. M. Weill and M. Lucien Thévenot (*Archives de Médecine des Enfants*, July, 1907).—It was in 1899, when MM. Variot and Chicitot reported the results of examination of twelve cases, that attention was first drawn to this subject. These authors showed that by this means, at least in the case of adults, the information as regards seat, extent and disappearance of the lesion was more exact than by ordinary physical signs. Its usefulness the present authors consider even greater in the case of children, in whom the diagnosis of lobar pneumonia is often difficult, owing to the absence of definite physical signs.

The present paper is based on a study of thirty-eight cases which have been grouped into four classes.

Group I comprises twenty-four cases, in all of which physical signs and radiographs gave corresponding results. As a rule, the intensity of the shadow varies *pari passu* with the physical signs, but in some cases the shadow on the fluorescent screen persisted for from two to thirty-seven days after disappearance of physical signs. Again, in the case of central pneumonia, a shadow will substantiate the diagnosis some time before the consolidation has extended to the surface and been revealed by ordinary physical signs.

In Group II is a single case, never revealed by radiograph, yet accompanied by the usual signs and symptoms.

Group III contains two cases with doubtful physical signs, but with characteristic symptoms. Both gave very distinct shadows indicative of consolidation.

In Group IV are nine cases, seven of which were doubtful from the clinical point of view. There was, as a rule, some slight fever of from two to four days' duration, with signs of bronchitis (subcrepitant râle and faint tubular respiratory murmur), but no defective movement of chest, nor dulness to percussion. In another case there was, in addition to the above signs, dulness to percussion and defective movement, which were only present for one day. In his remaining case, the illness lasted for five days, with a temperature ranging between 102.2° and 104°, pain in the side, and cough. Some fine râle and faint tubular respiratory murmur were audible over the painful side, but there was neither dulness nor defective movement. A herpetic eruption was present on one eyelid. In not one of these nine cases was there the slightest shadow present.

The following are the author's conclusions:—

“1. ‘Frank pneumonias’ with fibrinous exudate give almost always distinct,

though perhaps tardy, physical signs, and a sharply delimited shadow with the x-rays."

"2. Those affections which do not give any shadow, but which are, however, usually clinically considered pneumonia, should be classified apart. They are most frequently examples of broncho-pneumonia or simple congestive attacks."

"3. The central type of pneumonia is exceedingly rare, and one should only classify as such those cases devoid of physical signs, but showing undoubted shadows from the beginning."—LEONARD FINDLAY.

*Books, Pamphlets, &c., Received.*

- Preventable Blindness, an Account of the Disease Known as the Ophthalmia of the New-born, and of its Effects; with a Plea for its suppression, by N. Bishop Harman, M.A., M.B., F.R.C.S. Eng. London: Baillière, Tindall & Cox. 1907. (2s. 6d. net.)
- Ueber das Tasten normaler Magenteile. Nebst Bemerkungen zur Höhenbestimmung der Bauchorgane. Von Dr. Theodor Hausmann. Berlin: Verlag von S. Karger. 1907. (M. 1.)
- Die Krankheiten des Verdauungskanaals (Oesophagus, Magen, Darm), ein Leitfadens für praktische Aerzte. Von Dr. Paul Cohnheim. Mit 17 Abbildungen. Zweite, vermehrte und neubearbeitete Auflage. Berlin: Verlag von S. Karger. 1908. (M. 6.)
- The Quarterly Journal of Medicine, edited by William Osler, J. Rose Bradford, A. E. Garrod, R. Hutchison, H. D. Rolleston, and W. Hale White. Vol. I, No. 1. Oxford: The Clarendon Press. (25s. per annum.)
- The Border-land of Epilepsy: Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms, and their Treatment, by Sir William R. Gowers, M.D. Lond., F.R.S. London: J. & A. Churchill. 1907. (4s. 6d. net.)
- The Reduction of Cancer, by the Hon. Rollo Russell. London: Longmans, Green & Co. 1907. (1s. 6d. net.)
- Aids to Pathology, by Harry Campbell, M.D. Lond. London: Baillière, Tindall & Cox. 1908. (3s. 6d. net.)
- The Transactions of the Edinburgh Obstetrical Society. Vol. XXXII. Session 1906-1907. Edinburgh: Oliver & Boyd. 1907.
- Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation, by Professor Edmund von Neusser, M.D. Authorised English Translation by Andrew MacFarlane, M.D. Part I: Dyspnoea and Cyanosis. New York: E. B. Treat & Co. 1907.
- Marriage and Disease, being an abridged edition of "Health and Disease in relation to Marriage and the Married State," edited by Professor H. Senator and Dr. S. Kaminer. Translated from the German by J. Dulberg, M.D. London: Rebman, Ltd. 1907. (10s. 6d. net.)
- Movable Kidney and other Displacements and Malformations, by David Newman, M.D., F.F.P.S.G. London: Longmans, Green & Co. 1907. (5s. net.)
- Hygiene of the Lung in Health and Disease, by Professor Dr. Leopold von Schrötter. Translated by H. W. Armit, M.R.C.S., L.R.C.P. With 16 illustrations. London: Rebman, Ltd. 1907. (2s. net.)
- Food and Hygiene, an Elementary Treatise upon Dietetics and Hygienic Treatment, by William Tibbles, LL.D., L.R.C.P., M.R.C.S. London: Rebman, Ltd. 1907. (8s. net.)
- "Lloyd's" Family Doctor: Practical Hints for the Family on the Preservation of Health and the Treatment of Illness, by Dr. Andrew Wilson. London: "Lloyd's Weekly News." (6d. net.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 21st DECEMBER, 1907.**

	WEEK ENDING			
	Nov. 30.	Dec. 7.	Dec. 14.	Dec. 21.
Mean temperature, . . .	34·6°	38·9°	41·9°	42·9°
Mean range of temperature between day and night, . .	17·3°	24·5°	11·0°	23·0°
Number of days on which rain fell, . . . . .	1	6	6	6
Amount of rainfall, . . ins.	0·35	1·38	1·79	1·84
Deaths registered, . . .	348	333	337	338
Death-rates, . . . . .	21·4	20·5	20·7	20·8
Zymotic death-rates, . . .	1·2	1·5	2·0	2·0
Pulmonary death-rates, . .	4·6	4·7	4·2	5·2
<b>DEATHS—</b>				
Under 1 year, . . . . .	93	65	71	70
60 years and upwards, . .	75	70	82	70
<b>DEATHS FROM—</b>				
Small-pox, . . . . .	1*	...	...	...
Measles, . . . . .	23	48	43	35
Scarlet fever, . . . . .	1	2	1	1
Diphtheria, . . . . .	...	3	4	3
Whooping-cough, . . . .	10	3	10	11
{ Fever, . . . . .	1	3	1	2
{ Cerebro-spinal fever, . .	4	...	...	3
Diarrhoea, . . . . .	17	12	11	8
Croup and laryngitis, . .	1	2	...	1
Bronchitis, pneumonia, and pleurisy, . . . . .	83	87	85	67
<b>CASES REPORTED—</b>				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	3	2	6	3
Diphtheria and membranous croup, . . . . .	36	29	30	30
Erysipelas, . . . . .	30	15	23	20
Scarlet fever, . . . . .	41	47	32	46
Typhus fever, . . . . .	...	...	...	...
Enteric fever, . . . . .	11	13	10	6
Continued fever, . . . .	...	...	...	...
Puerperal fever, . . . .	1	3	...	2
Measles,† . . . . .	675	701	1090	934

\* Chicken-pox.

† Measles not notifiable.

THE  
GLASGOW MEDICAL JOURNAL.

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No. II. FEBRUARY, 1908.

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ORIGINAL ARTICLES.

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DEGENERATION OF THE SPINAL CORD ASSOCIATED  
WITH SEVERE ANÆMIA IN A CASE OF CHRONIC  
GASTRIC ULCER.<sup>1</sup>

By T. K. MONRO, M.A., M.D.,  
Physician to the Glasgow Royal Infirmary.

WITH AN ACCOUNT OF THE ANATOMICAL CONDITION.

By MARY B. HANNAY, M.B., C.M.,  
Assistant Pathologist to the Infirmary.

ALTHOUGH Leichtenstern, in 1884, described two cases of what he called tabes associated with anæmia, it was really Lichtheim who, in 1887, drew general attention to the subject by his account of three cases in which the clinical symptoms of pernicious anæmia were associated with symptoms indicative of changes in the spinal cord. Since then numerous examples of a similar combination have been put on record by different observers. Summaries of the earlier cases were given by

<sup>1</sup> The case was reported, and specimens from the spinal cord and bone-marrow were shown, at a meeting of the Glasgow Medico-Chirurgical Society on 1st November, 1907.

James Taylor in an important paper published in the *Medico-Chirurgical Transactions* for 1895,<sup>1</sup> and at the same time this writer reported two fresh cases illustrating the association of anæmia with changes in the cord. Further observations made it clear that the anæmia under such circumstances did not always present the features which might be regarded as characteristic of pernicious anæmia, and, indeed, Taylor carefully refrained from applying that designation to his cases. Bowman,<sup>2</sup> who published an example in 1894, thought that these cases belonged to the ataxic paraplegias, and Risien Russell,<sup>3</sup> in 1898, suggested that they might be due to the same poison as caused ataxic paraplegia. Russell published three additional cases at this time, and emphasised three important facts, viz., (1) that the anæmia does not always present the features of pernicious anæmia, either clinically or pathologically; (2) that the cord symptoms may precede the anæmia by months or perhaps even years; and (3) that similar changes may occur in the cord without anæmia.

In a paper<sup>4</sup> published in 1900, Russell, Batten and Collier endeavoured to elevate this form of disease of the spinal cord to the dignity of a distinct morbid entity, under the title of "subacute combined degeneration of the spinal cord." Accordingly, they separated it not only from Friedreich's ataxy, general paralysis with combined posterior and lateral sclerosis, and possibly the very chronic affection commonly known as ataxic paraplegia, but also from two other groups of cases, viz., firstly, cases of fatal anæmia in which structural changes are found in the cord after death, though there were no evidences of nervous disease during life; and, secondly, cases of severe anæmia, in the course of which vague nervous symptoms arise, and in which after death structural changes are found, which may at least suggest an early stage of the condition more characteristic of the subacute combined degeneration. In this new entity, the anæmia might appear before, along with, or after the onset of the nervous symptoms, or there might be no anæmia at any stage. The anæmia might improve considerably under iron and arsenic, but no drug was found to influence the nervous symptoms. These authors held strongly to what must appear to be the most reasonable theory, viz., that some toxin is responsible for

<sup>1</sup> Vol. lxxviii, pp. 151-170.

<sup>2</sup> *Brain*, vol. xvii, pp. 198-213.

<sup>3</sup> *Lancet*, vol. ii, pp. 4-14.

<sup>4</sup> *Brain*, vol. xxiii, pp. 39-110.

both the anæmia, where it exists, and the changes in the spinal cord; and while they called attention to the interesting fact that the degenerated tracts correspond exactly to the area of distribution of the peripheral arteries derived from the vessels of the pia mater (viz., practically the whole of the white matter of the cord, except that which borders on the anterior horns), they maintained that the vessels are influential in this disease simply as carriers of the toxic agent to the nerve elements. A valuable bibliography was appended to this paper.

The present case does not correspond to the type established by Russell, Batten and Collier, either from the clinical or from the anatomical point of view. No doubt there was the ataxy or ataxic paraplegia of the first stage, but those evidences of profound and progressive changes in the spinal cord, which characterise the second and third stages of subacute combined degeneration, did not show themselves here. Neither did anatomical investigation reveal a diffuse focal lesion of the white matter in the dorsal region, with secondary ascending and descending degeneration of the long tracts above and below. On the contrary, the changes in the cord were suggestive of a primary neuron degeneration like that of tabes, with its intensity greatest in the lumbar region, and with the addition of a very slight degeneration in the pyramidal tracts.

It is reasonable to suppose that the toxin which induced the degeneration in the cord, and which was probably also the main cause of the anæmia, was evolved, or at anyrate absorbed, at the seat of ulceration in the stomach. It may be remarked that the occurrence of system degeneration in the spinal cord is well known in connection with other morbid blood states besides anæmia, since it may be met with in diabetes, and in certain forms of grain poisoning, such as ergotism, lathyrism, and pellagra. Indeed, tabid symptoms have been observed during life, and extensive degeneration of the posterior columns after death, in more than one case of bothriocephalus anæmia.<sup>1</sup> Weisenburg mentions the case of a man of 42, in whom a gastric hæmorrhage was followed by loss of sight from double optic neuritis, and in whom spinal symptoms also developed, in association with the blood changes of pernicious anæmia.<sup>2</sup>

<sup>1</sup> Lichtheim and Minnich, quoted by Lazarus in *Nothnagel's Encyclopedia*, English edition, *Diseases of the Blood*, p. 277.

<sup>2</sup> *The Eye and Nervous System*, edited by W. C. Posey and W. G. Spiller, 1906, p. 583.



It will be noted that the condition of the blood improved very considerably under treatment, but it cannot be said that this had any obvious effect in postponing the fatal termination.

The view may, of course, be taken that, so far as the nervous system is concerned, this was a genuine case of tabes, and that the changes found in the aorta in one so young may be regarded as evidence of a syphilitic infection, in spite of the patient's denial.

William B., aged 28 years, compositor, was admitted to the Glasgow Royal Infirmary on 26th January, 1907, on the recommendation of Dr. Robert Scott. The patient complained of weakness of the legs, and inability for work.

One year before admission he had rheumatic pains in the knees off and on for three months. After recovery from these he made no complaint except that he did not feel so strong as usual.

He went for a fortnight's holiday in August, 1906, and after his return seemed easily startled and excitable. His speech was very hurried at that time, but after admission it was slow and a little indistinct. He had a distaste for his work, and lack of interest in it ever since that holiday. Two months before admission his gait was observed to be not so good as usual, the feet and legs seemed stiff, and he did not put them to the ground properly. This became gradually worse. No giddiness was complained of, but he frequently fell on account of stiffness and weakness of the legs. He had a tendency to fall backwards, and on two occasions he hurt himself by falling.

On 21st January, 1907, he was brought home on account of the unsteadiness on his feet, after which he remained in bed till the day of admission. For fourteen days before he came to the infirmary there had been marked staggering, both in walking and on standing. No tremor was ever noticed.

In November, 1906, he first complained of pain in the stomach after food. Up to the time of admission he still had occasional attacks of pain, but the latter was not accompanied by sickness. There was no incontinence of urine or of fæces. The eyesight had been failing for two months before admission. Memory failed from the commencement of the illness. There was no headache. Obstinate constipation and great loss of flesh were other features. The patient said he had never exposed himself to the risk of acquiring syphilis.

*Condition on admission.*—Languid and thin; replies very

slowly, speech deliberate; skin and mucous membranes pale; no cough; no pain; no abnormality of ocular muscles; no tremor in hands or face; muscles firm; knee-jerks lost; plantar reflexes doubtful, but mainly flexor; inco-ordination present in legs (left leg worse) as tested in bed; Romberg's symptom not present; gait stiff and slow; unable to walk along a narrow base; staggering on turning; power of legs and toes good; no loss of sensation.

*Heart.*—Apex beat not felt. Sounds free from murmur.

Pulse, 84; medium in size and tension.

*Lungs, liver, and spleen* seem normal.

*Urine.*—Normal.

28th January, 1907.—O.E.L.: myopia, with secondary choroidal changes. O.E.R.: hypermetropia; fundus practically normal.

*Blood.*—Red corpuscles, 2,042,000 per cm.; white corpuscles, 6,400 per cm.; hæmoglobin, 15 per cent; colour index, 0·3.

29th January.—*Differential count:* Polymorphonuclear, 77·6 per cent; small mononuclear, 18·1 per cent; transitional, 1·8 per cent; eosinophile, 1·8 per cent; one normoblast seen.

31st January.—*Fæces:* Very dark; no parasites or ova; large numbers of blood corpuscles.

8th February.—*Blood:* Red corpuscles, 2,500,000; white corpuscles, 10,000; hæmoglobin, 30 per cent.

13th February.—*Blood:* Red corpuscles, 3,520,000; white corpuscles, 9,400; hæmoglobin, 40 per cent.

20th February.—*Blood:* Red corpuscles, 3,280,000; white corpuscles, 7,000; hæmoglobin, 55 per cent.

28th February.—*Blood:* Red corpuscles, 3,200,000; white corpuscles, 11,800; hæmoglobin, 55 per cent. Temperature febrile and irregular; mouth dirty; throat inflamed.

3rd March.—Patient getting distinctly duller. Passing evacuations in bed.

4th March.—No further change in fundi.

5th March.—*Blood:* Red corpuscles, 3,760,000; white corpuscles, 9,200; hæmoglobin, 60 per cent.

10th March.—Increasing weakness; crying out and gasping for air at night; mental condition very variable as to intelligence or stupor; temperature continues irregular; skin of back beginning to break.

12th March.—Died.

*Treatment.*—Among the remedies employed were Fowler's solution, Bland's pill (in view of the low colour index), liquor calcis saccharatus (after the blood corpuscles were discovered in the stools), and antistreptococcus serum.

*Post-mortem examination* (13th March, 1907).—*External appearances.*—Physique fairly good; nutrition very poor; *post-mortem* rigidity absent; *post-mortem* lividity present; no injuries; shallow bedsores over the sacrum and on the right hip, beginning also on the left hip; no enlarged glands; pupils slightly dilated and not quite equal; teeth fairly good; no grey hair; no deformities.

*Head.*—The scalp, skull-cap, and dura mater are all natural. There is great excess of subdural fluid. The pia-arachnoid shows slight opacity and slight thickening, and contains great excess of fluid. There is no prefrontal adhesion. The vessels and sinuses are natural. The brain shows considerable wasting.

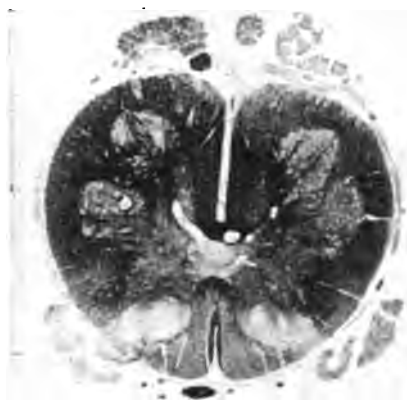


FIG. 1.  
First lumbar.

The ventricles contain great excess of fluid and are not granular. Section of the brain reveals no further abnormalities.

*Spinal cord* to the naked eye looks normal, and the membranes are also natural.

*Thorax.*—The pericardium contains about 3 oz. of clear fluid. There is some hypertrophy of the left ventricle of the heart. The cardiac muscle is of good colour and consistence, and the valves are all natural. The coronary arteries are natural, except at their orifices. The aorta shows very well-marked pearly-white fibrosis (especially at its origin, where there is also some puckering), and the orifices of the coronary arteries are distinctly narrowed. Both lungs are free. They are decidedly emphysematous, and the right one is congested

posteriorly. The right pleural cavity contains a little free fluid. There is no evidence of tubercle. The ribs are distinctly soft.

*Abdomen.*—The peritoneum and omentum are natural. There is cloudy swelling of the liver. It and the gall-bladder are otherwise natural. The spleen is rather large and firm, and is slightly congested. There is no fibrosis. Both kidneys are large, exceedingly flabby, and very congested. The capsules are adherent. Several abscesses, the size of hemp seeds, are dotted over the surface of each, and each pelvis is somewhat injected. The ureters and renal arteries are natural.



FIG. 2.  
Second dorsal.

The adrenals are natural; also the pancreas. The stomach has undergone *post-mortem* digestion in its upper part. There is a simple chronic ulcer, three-quarters of an inch by half an inch, on the lesser curvature, about 3 inches above the pylorus. The gastric mucous membrane has a whitish, unhealthy appearance, and a similar appearance is present in the first part of the duodenum. The abdominal aorta shows small patches of pearly-white fibrosis and a little early atheroma.

*Pelvis.*—The bladder is contracted and somewhat hypertrophied. It shows early acute cystitis. The urethra and prostate are natural.

The marrow of the right femur is normal in appearance.

*Microscopical examination.*—*Spinal cord.*—Sections are made of the cord at the level of the fifth cervical, second

dorsal, ninth dorsal, and first lumbar segments. There is no recent degeneration in any of them, but there is a well-marked sclerosis of the posterior columns, most marked in the lumbar region. At the level of the first lumbar segment, two areas in the posterior columns are spared—the cornu-commissural, immediately behind the posterior commissure, and a narrow strip on each side of the dorsal part of the posterior median fissure, composed, no doubt, of fibres of endogenous origin, and representing the median oval area of Flechsig. The sclerosis is greatest across the central two-fourths of the posterior column, except for the area just mentioned, and is less intense



FIG. 3.  
Fifth cervical.

in the posterior fourth. There is marked sclerosis of the posterior roots, and the tract of Lissauer is similarly affected (Fig. 1). At the ninth dorsal segment, sclerosis is still very marked in the central part of the posterior columns, but the posterior root zone is spared. In the upper dorsal region, sclerosis is not so widespread. It is very marked in the neighbourhood of the fissure, and there is a patch also in the postero-lateral column (Fig. 2). In the cervical region (Fig. 3) sclerosis is almost confined to the postero-median column, and is very much less marked than in the lumbar region. In all regions there is a very slight sclerosis in the pyramidal tract. The direct cerebellar tract is unaffected. The vessels in all the sections examined are normal in appearance.

Sections are made of the rib marrow. The cellular element is distinctly less than in a normal (control) specimen.

CASE OF CIRRHOSIS OF THE LIVER IN A BOY  
9 YEARS OLD.<sup>1</sup>

By WALTER K. HUNTER, M.D., D.Sc.,

Physician to the Royal Infirmary; Extra Physician to the Royal Hospital for Sick Children; Lecturer in Practice of Medicine, Queen Margaret College.

CIRRHOSIS of the liver in childhood seems a sufficiently rare condition to warrant one bringing a case of this disease before the notice of the Society. In the ten years or more that I have acted as Dispensary Physician at the Children's Hospital, I have not seen, or, at least, never recognised, such a case, and during that time I must have examined from ten to fifteen thousand sick children. However, during the same time, I have seen at the Royal Infirmary (dispensary and wards) three cases of cirrhosis of the liver in childhood, and the number of children examined there was very much less. Dr. West states that he had seen four cases in 70,000 sick children examined by him.

The chief points of interest in the case are as follows:—

W. B., aged 9 years, was admitted to Ward 7 of the Glasgow Royal Infirmary on 26th October, 1906.

He had always been regarded as a healthy boy, till January, 1906, when his parents noticed that his colour was "bilious-like," and that he was liable to attacks of vomiting. Rich food always upset him, but even when kept strictly on light diet the vomiting would recur from time to time, once or twice, and sometimes oftener, in the week. He also showed signs of listlessness and disinclination for any sort of physical effort, and he developed a very capricious appetite. Some days he would scarcely touch food, and then for a fortnight or so he would eat hungrily, and could with difficulty be satisfied. The attacks of sickness seemed to have little relationship to these various phases of the appetite. The sickness was accompanied by nausea and retching, and left the patient feeling much exhausted, and he would still be nauseated and tired the next morning.

In the beginning of June he had an attack of pneumonia in the right lung. He was nursed at home, and was confined to bed for a fortnight. During this time there was frequent bleeding from the nose, and since then there had often been

<sup>1</sup> A Communication made to the Medico-Chirurgical Society of Glasgow on 15th November, 1907.

some oozing from the nasal and oral mucous membranes. About this time, too, the urine was noted to be high coloured, and this remained so up till the time of admission.

In the beginning of July the patient was suffering from frontal headache and increasing listlessness, and his skin had still a jaundiced tint. The intermittent attacks of vomiting and the capricious appetite were likewise present. A fulness over the upper part of the abdomen was first noticed about the beginning of August. The bowels had never been constipated, though, since the onset of the present illness, the motions had been more or less constantly pale in colour. Latterly, the patient had been unusually sensitive to cold, spending much of his time over the fire, and it was increasingly difficult to keep him out of bed during the day.

He had always been well cared for, well housed, well fed, and well clothed. He had whooping-cough when 2 years of age, scarlet fever at  $3\frac{1}{2}$ , and measles immediately after. But these were his only ailments up till the onset of the present illness.

The father is alive and well, but he is described by his wife as having a "bilious" appearance, which is sometimes more marked than at others. The child's mother is also alive and fairly well. She suffers a good deal from indigestion, and is likewise liable to attacks of biliousness. When her third child was 6 months old she had a definite attack of jaundice, which, however, passed off in a few days. The paternal grandfather, who lived for fifteen years in India, suffered from some liver complaint, from which he ultimately died. The maternal grandfather also lived in India for ten years, and died of a liver complaint. He was severely jaundiced shortly before his death, and the doctor who attended him said his liver was "dried up." The patient was the eldest of five children. The second died, aged 15 months, of whooping-cough and pneumonia; the third, aged  $6\frac{1}{2}$  years; the fourth, aged  $3\frac{1}{2}$  years; and the fifth, aged 14 months, are all quite healthy. None of them has had jaundice, and in none of them can any enlargement of the liver or spleen be made out.

On physical examination the child was seen to be well developed and fairly well nourished. The conjunctivæ were slightly jaundiced, and the skin had a dirty, yellowish tint. The tongue was clean, and the teeth in fairly good condition. The patellar and plantar reflexes were normal. Temperature  $97^{\circ}$ , and pulse 84. The heart and lungs were normal.

On inspection of the abdomen there was definite fulness to be seen in the epigastric and hypochondriac regions, but the superficial veins were not enlarged. The circumference of the abdomen, 3 inches above the umbilicus, was  $26\frac{1}{2}$  inches. On palpation the lower edge of the liver could readily be made out extending as an irregular curve (convexity downward) from the tip of the ninth right rib to that of eighth left rib. The lowest point of the curve was in the midline, and extended to 2 inches above the umbilicus. There was no hepatic tenderness. The tip of the spleen could likewise be palpated, extending 1 inch below the left costal margin.

The urine had a specific gravity of 1012, and had a greenish tinge: it, however, gave no reaction for bile, or blood, or sugar. The motions were pale, but contained bile-colouring matter.

The red corpuscles numbered 4,040,000 per cubic mm.; the white, 12,500: and hæmoglobin, 70 per cent. Blood films presented no abnormalities.

The patient remained in hospital till 4th February, and during most of that time he was up and going about, and he seemed to enjoy good health. He took his food well, never had sickness or vomiting, and gained 4 lb. in weight. The urine up till near the end of December had a yellowish-green tint, and contained usually a slight trace of bile. Since the end of December, however, till the time of his leaving hospital, there was only one occasion (12th January) when the bile reaction was obtained. Coincident with the disappearance of bile from the urine the colour of the motions improved. Up till about Christmas time their colour varied from white to a pale yellow, but they were evidently never quite free from bile. After that, excepting on four days, namely, 12th, 13th, 25th, and 26th January, when they were again pale, their appearance was practically normal. It was thought that this change in the colour of the motions was due to the administration of ox bile. During the first week this drug was given there was no marked change in the appearance of the motions. During the next two weeks, on some days part of the motions would be of normal colour, whilst other parts would be paler. Subsequent to that, as just stated, the motions were generally quite normal. With this change in the urine and fæces the patient's colour improved. He had still the dull, earthy tint, but the yellow tinge was less distinct, though it was still present in the conjunctivæ.

Mostly every day while in hospital there was some slight



bleeding from the nose, and twice there was a fairly abundant epistaxis. There was no appreciable change in the size of the liver or spleen to be noted during the three months he was under observation, and at no time was there any fluid to be made out in the abdominal cavity. The temperature remained normal throughout.

The patient again presented himself for observation on 9th March, and it was then noted that in general appearance he was much the same as on leaving the hospital on 4th February. But his mother said that he was not so well since leaving the ward. Some days he would seem fairly well, but on others he would be sick and vomiting. Sometimes, too, he was very yellow, and at these times the motions were usually light in colour and the urine very dark. The condition of the abdomen was the same as formerly noted.

For the next five months the child's condition showed little change, and he took his food fairly well. The colour of his skin varied a good deal from time to time, being sometimes yellower and sometimes less so. The motions were nearly always light-coloured, but never quite white. On 2nd August, however, he had a "bilious attack," with vomiting and diarrhoea, and since then the skin had been yellower and the abdomen considerably more distended than formerly. Following on this he was not so well, and preferred to stay in the house.

He was readmitted to hospital on 15th August, 1907, on account of the swelling of the abdomen. On examination at this date the patient's general appearance was much the same as in February. The colour of the skin was not much darker or much yellower. The abdomen was considerably distended, its circumference measuring 32 inches, as against 26½ inches nine months previously. The superficial veins were distinctly visible, but not unduly prominent. There was apparently a considerable amount of free fluid in the abdominal cavity; also some fluid in the pleural cavities, there being dull percussion note, with diminished breath sound, from the mid scapula downwards on the right side, and from the angle of the scapula downwards on the left side. The feet were slightly œdematous. The liver was not now so easily palpable as formerly, but its enlarged left lobe could still be made out, and it seemed to be of much the same size as when last noted. The urine was of a lightish amber colour, and gave no reaction for bile.

The patient was treated with a dose of magnesium sulphate every morning, and in the course of three weeks all signs of

fluid in the abdominal or pleural cavities had disappeared. The urine at this time (6th September, 1907) was still free from bile, and the motions, though pale, contained invariably some colouring matter. For the next month ox bile was again given, with the result that the motions became much darker.

On 6th October the patient was sick and vomiting, bringing up bilious-looking matter, and the temperature rose to 104.4°. It fell again next morning to 99°, and the patient seemed quite well. He said the attack was similar to the "attacks of bile" which he suffered from while at home, and which came on as often as once a month. The next day, however (7th October), he felt shivery, and the temperature, which at 12 noon was 97.8°, rose by 4 P.M. to 104°. Following on this there was pneumonic consolidation of the whole of the right lower lobe, and blood appeared in the sputum. The patient was pretty ill, and delirium was a marked feature. By the 12th October he seemed much better, but the physical signs remained little changed. By the 18th it was noted that the left border of cardiac dulness was displaced 1½ inch to the left of the nipple line, and for the first time since coming under observation the right lobe of the liver could be palpated 1 inch below the right costal margin in the anterior axillary line. A needle was inserted in the ninth interspace behind and pus obtained. The patient was operated on the next day (19th October), and the empyema drained, but he died two days later.

At the *post-mortem* examination the right lung was found adherent on its anterior surface by thick fibrous adhesions (probably dating from the attack of pneumonia fifteen months before). The posterior part of the pleural cavity showed the remains of the purulent exudation. The right lung was cedematous, somewhat collapsed, and weighed (28 oz.) more than twice as much as the left lung. The lung still contained air, for it floated in water. The left lung was congested, but otherwise healthy. The bronchial lymphatic glands were enlarged. The heart (6½ oz.) appeared quite healthy. The liver (30 oz.) was about the normal size for a child of 9 years, but its shape was altered, in that while the right lobe seemed smaller than normal the left lobe was distinctly larger than it should have been. The surface of the organ was definitely nodular, and the cut surface pale and of a yellowish colour. The gall-bladder contained fluid bile of a light yellow tint. The spleen (9 oz.) was much enlarged. The kidneys (9 oz.) were normal. In the Peyer's patches of

the small intestine and the solitary follicles of the colon there was a grey pigmentation, but no other abnormality. Some of the mesenteric glands were enlarged, and one was definitely caseous.

On microscopic examination of the liver there was seen to be a very advanced multilobular cirrhosis. In parts the



Case of cirrhosis of the liver in a boy, 9 years old.

connective tissue was well formed, but generally it was very cellular, suggesting considerable activity in the tissue. In such places there were numerous rows of deep-stained cells, the new bile-ducts, or, perhaps more correctly, proliferating liver cells. In the lobules there was a marked fatty infiltration (or degeneration) of the parenchyma cell. There was no apparent blocking of the bile-ducts. The spleen had its

sinuses distended with blood, but no definite fibrosis was made out.

There was little difficulty in diagnosing this patient during life as having a cirrhosis of the liver; the difficulty lay in determining to which type of cirrhosis it should be referred, whether it should be regarded as a multilobular (portal) or a monolobular (biliary) cirrhosis. Both these types have fairly well defined features clinically as well as pathologically. In the *portal* cirrhosis, which, pathologically, is multilobular, the jaundice is often absent, and if present is transitory and slight. There is more often hæmatemesis and, later, ascites. The liver may be larger or smaller than normal, but it is often irregular in outline. The spleen usually is only moderately enlarged. This type is met with chiefly in late middle life. In *biliary* cirrhosis, which is monolobular, jaundice is present more or less constantly throughout the illness. Hæmatemesis and ascites are rare. The liver is enlarged, and uniformly so, with a smooth or finely granular surface. The enlargement of the spleen is considerable, and the disease is one chiefly of early adult life. These two types, however, are not always distinct anatomically or clinically, and indeed they may be combined, or, perhaps more correctly, the one superimposed on the other.

Cirrhosis in children may take either of these two forms, but biliary cirrhosis is relatively commoner in children than in adults. There is a tendency, too, for more than one member of the family to be affected, doubtless depending on the fact that children being brought up together are all more or less subjected to the same predisposing and exciting causes. Syphilis, or, perhaps, rather parasyphilis, seems to definitely predispose even to the multilobular form of the disease. But cirrhosis of the liver may be congenital and yet not syphilitic, being due rather to some other toxin reaching the liver of the child in the placental blood-stream. As compared with the adult, hæmatemesis is less frequent in the cirrhosis of the child, but bleeding from the nose and other mucous membranes is perhaps more frequent. Enlargement of the liver and spleen is, as a rule, more marked than in the adult, and a rise in temperature is also more often met with. Ascites is not very uncommon. Jaundice and diarrhoea are also more often found in children, even in the portal form of cirrhosis. In biliary cirrhosis there seems to be a partial arrest of development, for children with this form of the disease seem to stop growing and look small for their age.

The case just described to you had some of the features of both forms of cirrhosis, though the irregular enlargement of the liver (only the left lobe was palpable) favoured the view of portal cirrhosis, and the ascites, which appeared later on, seemed to confirm this view. But the more or less constant jaundice, with pale motions and bile in the urine, as well as the bleeding from the nose and gums, kept suggesting the possibility of its being of the biliary form. Another factor which had some bearing on the diagnosis was the presence in the ward of a second patient with jaundice, enlarged liver, and enlarged spleen. This latter case seemed more typically of the biliary form of cirrhosis; but the similarity of the two cases in the degree of jaundice, in the amount of bile in the urine, and in the fæces, suggested a disease of a similar nature in both. The liver, however, in the second case was uniformly enlarged, and so far the patient has shown no signs of ascites. The history of this case is briefly as follows:—

F. M., æt. 21, a shoemaker, was admitted to Ward 12 on 22nd October, 1906, complaining of "jaundice and a swollen liver."

The first symptom of his illness appeared about the middle of May, 1906, in the form of yellow raised patches on the face and arms, and then all over the body. These were evidently of the nature of an urticaria, and they varied in size from that of a sixpence to a five-shilling piece. They were exceedingly irritable, but disappeared in an hour or two, with, however, a tendency to recur later on. There was no vomiting or indigestion accompanying this eruption, but the motions at the time were observed to be pale in colour.

By the beginning of June he noticed that his skin was jaundiced, and on the advice of a doctor he went to the country for six weeks' holiday. At the end of that time the yellow tint of the skin had almost gone, and the motions were much darker. But the skin never quite regained the normal colour, though from time to time the jaundice varied in intensity. All this time the patient was fairly well, and he was never confined to bed. He noticed, however, that he was gradually getting thinner and weaker, and occasionally he suffered from vertical headache. There were no symptoms of dyspepsia and no vomiting, though at times he had a feeling of nausea. He had been aware for some time past that there was swelling in the upper part of his abdomen, but he could not remember when first this was noticed. He says the swelling was first on the right side, and that this side was always the more prominent of the two.

He had whooping-cough when 2 years old, scarlet fever at 5, German measles at 7, and measles at 9. Otherwise he was always a healthy boy. He never took alcohol in any form, and has always been well fed. His father and mother were healthy. The patient is the third of a family of eight. The others all enjoyed good health, and none of them ever had jaundice. (Two of the brothers were examined, the oldest, aged 24, and the second youngest, aged 9, but neither showed any enlargement of liver or spleen.) The mother has had no miscarriages.

On admission to hospital the patient looked thin and small for his age; he looked liker 16 than 21. His weight was 5 st. 9 lb. The skin and conjunctivæ were definitely jaundiced. The teeth were good. The heart and lungs were normal. The abdomen showed an undue fullness, particularly in its upper part, and greater in the right than in the left hypochondrium. It measured  $30\frac{1}{2}$  inches in circumference 3 inches above the umbilicus. The abdominal walls were fairly tense, but there was no evidence of fluid in the abdominal cavity. The lower edge of the liver could be easily made out extending  $1\frac{1}{2}$  inch below the right costal margin, and in the middle line to within 2 inches of the umbilicus. There was no tenderness on palpation. The lower end of the spleen could likewise be palpated 2 inches below the left costal margin. The urine had a specific gravity of 1022, it was deep amber in colour, and contained a haze of albumen and a definite bile reaction. On examining the blood the red corpuscles numbered 4,880,000 per c.mm., the white corpuscles 6,250. The hæmoglobin was 50 per cent. The examination of stained films showed nothing abnormal beyond a comparative increase of the lymphocytes (42 per cent).

The patient remained in hospital for four months, and during that time the temperature was quite normal. For a few days after admission he had a return of the yellow urticaria patches, but these did not reappear after some days' treatment with calcium chloride. His general nutrition, too, improved, and he gained  $1\frac{1}{2}$  st. in weight in the four months. The abdominal condition remained unchanged. Its circumference was the same when he left the hospital as on admission, and the size of the liver and spleen remained much the same. There was complaint made from time to time of pain over the liver and in the splenic area, but no friction sound could be heard on auscultation in these regions, and no explanation for the pains could be given. The percentage of hæmoglobin increased to 85 per cent, and the

red corpuscles to 5,568,000 per c.mm. There was never any evidence of fluid in the peritoneal cavity, and the veins of the abdominal wall were not unduly prominent.

Up till 19th December, when ox bile was given internally, the motions were pale, though never quite free from bile, and the urine gave a bile reaction. But from shortly after that date till dismissal no bile could be detected in the urine, and the motions were generally considerably darker. The albumen which was present in the urine on admission disappeared in a few days. The patient's colour, too, gradually improved, and though his skin always seemed darker than normal it was difficult to affirm that he was jaundiced.

He was seen again on 26th March, 1907, *i.e.*, a month after leaving hospital, but now both the conjunctivæ and the skin had a distinct yellow tinge, and the urine gave an undoubted reaction for bile. He again reported himself on 3rd November, 1907, when his appearance was much the same. The jaundice, though not intense, was undoubted, and the reaction for bile in the urine was also readily obtained. He complained of debility and loss of strength, but he was able to follow his occupation, and he had not lost much in weight since leaving hospital. The condition of the liver and spleen was practically the same as formerly noted.

This seems a fairly typical case of biliary cirrhosis, yet the jaundice was little more marked than in the first patient, and the amount of bile in the urine and fæces was much the same in both cases. The improvement in the symptoms in both on giving ox bile was very striking. In neither could any history of syphilis be obtained; grey powder was given in both for several months, but with no apparent improvement.

The etiology of the disease in these two patients remains obscure, as it does in so many other such cases. The cirrhosis, it is generally agreed, is, in part at least, the result of an inflammatory reaction to some irritant in the liver. In multilobular cirrhosis the irritant seems to affect chiefly the portal areas, and must therefore reach the liver by the portal vein. In biliary cirrhosis, the cirrhosis being monolobular, the irritant probably comes by the hepatic artery. In the one case the irritant probably comes from the alimentary tract, in the other it will be in the general blood-stream. What this irritant may be, whether a micro-organism or a toxin, has not, so far, been certainly determined. In many cases there is a definite history of alcoholism. This was

certainly absent in the two patients just described, as it is in a large number of others; and in any case, experimental investigation makes it doubtful if alcohol acts otherwise than a predisposing agent, making the liver more vulnerable to some exciting micro-organism or toxin. Predisposition probably counts for a good deal in this disease, and hence we may find several members of the same family with cirrhosis of the liver. Our first case seemed to belong to a "cholemic family," for, as we have seen, several of his relations had suffered from jaundice, while others were regarded as being "bilious." This probably means that such patients are specially liable to have a catarrhal condition of their capillary bile-ducts, or to have the liver unduly affected by irritants reaching it by the portal circulation.

As to the etiology of cirrhosis of the liver, then, we are still in the dark, but it seems reasonable to suppose, as a predisposing cause, an undue irritability or susceptibility of the liver tissue, which may be congenital or acquired; and, as exciting cause, a toxin of unknown composition and origin, which sometimes reaches the liver by the portal and sometimes by the general circulation. Such a cirrhosis has been produced experimentally by injecting a certain drug into the general circulation; and it is probable that a toxin of this sort is produced over a long period and at times in greater quantity than at others, for the symptoms show, from time to time, definite exacerbations alternating with periods when the patient seems to improve. The enlargement of the spleen so often met with is probably also due to a toxæmia, which will be increased as the liver gets less efficient. Micro-organisms and toxins in the blood tend to collect in the spleen, from whence they may pass again in the portal blood-stream to the liver, and possibly in this way add a portal cirrhosis to what may formerly have been a biliary cirrhosis. Some explanation of this sort is required to account for the association of portal and biliary cirrhosis in the same liver.

In conclusion, I have to acknowledge the kindness of Dr. Workman in permitting me to show the liver of this patient, and of Dr. Hannay, who prepared the microscopic sections and who took the photograph of the liver.

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ALBUMINURIC RETINITIS WITH VASCULAR  
CHANGES: ANEURYSMS ON RETINAL ARTERIES.<sup>1</sup>

By A. J. BALLANTYNE, M.D.

WILLIAM M'L., aged 36. This man is a patient in the Glasgow Royal Infirmary, under the care of Dr. John Cowan, suffering from chronic nephritis (contracted white kidney).

Symptoms began in May, 1906, with a sudden attack of excruciating frontal headache. Vomiting followed in a few hours, and he noticed that his sight was dim. He felt sick and unwell for two days, and then the symptoms, including the dimness of vision, gradually passed off. A second attack occurred two months later, and then others at more frequent intervals, being about once a week for two or three months before his admission in May, 1907. Some shortness of breath and frequency of micturition were the only other symptoms complained of.

On admission the urine was found to be pale, of specific gravity of 1015; quantity rather deficient; albumen and casts plentiful. Patient seemed a healthy, well-nourished man. The heart was not enlarged, and there were no murmurs, but the aortic second sound was loud and intoned. The radial, brachial, and temporal arteries were all rigid and tortuous. The radial pulse showed very high tension, and blood-pressure, as given by the sphygmomanometer, was markedly elevated; systolic, 220 mm. Hg.; diastolic, 155 mm. Hg.

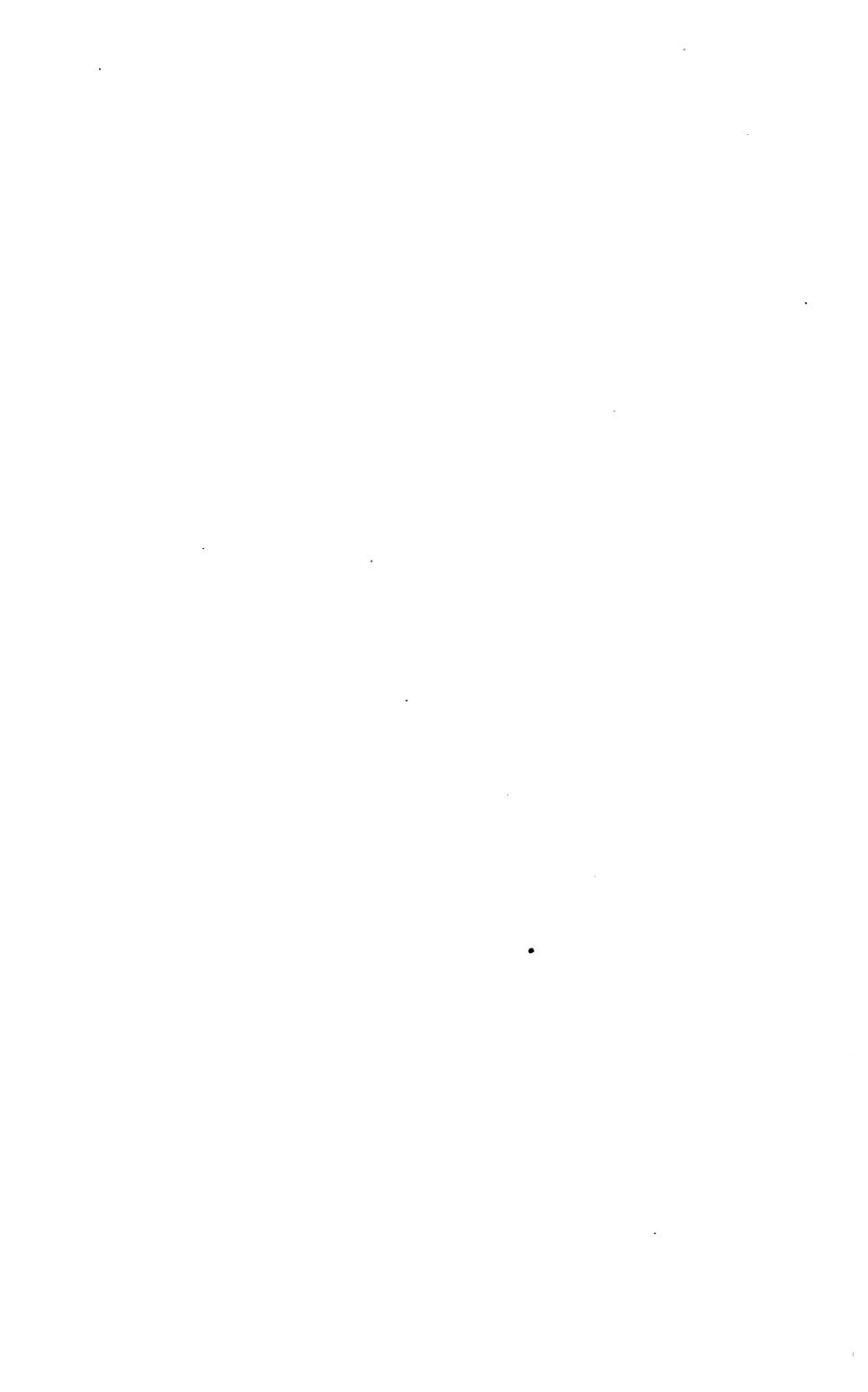
Visual acuity was only moderately reduced ( $\frac{2}{3}$ ). The dimness, which was said to accompany the attacks of headache, may have been a uræmic amblyopia.

*Ophthalmoscopic examination.*—Fig. 1 shows the appearances found in the right eye a few days after admission. The disc margins are slightly hazy. The retinal arteries are in places unduly tortuous, and the following evidences of arteriosclerosis are present:—

1. Irregularities of calibre.
2. "Silver wire," or "copper wire," appearance.
3. Constriction of the underlying veins.
4. The first branch of the lower temporal artery, in its course towards the temporal side, shows at one point a sudden loss of

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 1st November, 1907.





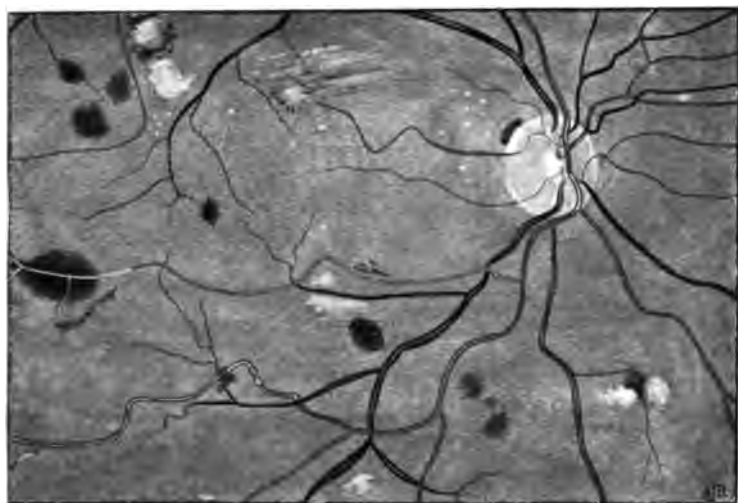


FIG. 1.

Condition of right fundus oculi on admission.

*(Reduced from the original drawing by about one-third.)*



FIG. 2.

Condition of right fundus oculi on 28th October, 1907.

*(Reduced from the original drawing by about one-third.)*



its normal double contour, and a little further on changes into a bright white band of equal width, which is rendered more visible by contrast with a large hæmorrhage across which it passes. Again, for a short distance the blood-column becomes visible, and, finally, its terminal branches may be traced as a number of fine white lines.

5. The main trunk of the lower temporal artery, at a point almost vertically below the macula, presents on one curve four separate aneurysms. These take the form of small globular dilatations of the whole lumen of the vessel. One of them is partly surrounded by a small retinal hæmorrhage. The same vessel, far out to the temporal side, gives off a branch in the form of a narrow glistening white line.

The veins are for the most part unduly wide and dark, with a well-defined central streak. As already stated, they are constricted where crossed by the arteries.

The other changes present are round and flame-shaped hæmorrhages of various sizes, irregular white soft-edged patches of exudate, and minute glistening spots scattered over the posterior part of the fundus.

The changes in the left eye were of the same kind, but the glistening degenerative spots were more numerous, and no aneurysms were found.

The patient's general condition improved steadily, and he was dismissed in July feeling well, with still a trace of albumen in the urine. The little aneurysms were already becoming less prominent, while the other evidences of vascular disease were increasing.

He was next seen on 26th September. He had taken a long holiday, and had been back to work for five weeks, and was feeling very well. The urine was practically as before, and the blood-pressure still high. (Systolic, 230 mm.; diastolic, 190 mm.)

*Ophthalmoscopic examination.*—The hæmorrhages and exudative patches had almost entirely disappeared, even the glistening degenerative spots were fewer. Two of the four aneurysms had disappeared. At the same time there were evidences that the vascular disease was advancing. The branch passing downwards from the lower temporal artery, just before the curve on which the aneurysms were found, showed at a point not far from its source a sudden diminution of calibre, and immediately proximal to this two small globular dilatations, similar to the other aneurysms in appearance, but smaller. The other branch, already referred to as presenting the appearance of a white line at its distal end, now showed a similar

appearance along a good part of its extent from its origin outwards. Other smaller arteries were beginning to show abrupt constrictions of their calibre. There was also a tendency to multiplication of the finer venous branches.

Patient returned on the 18th October, saying that there had been a return of the severe headache and vomiting a week earlier, which had compelled him to give up work. The albumen in the urine was very abundant, and granular and fatty casts in the deposit were numerous. He was re-admitted, and is still (1st November) under treatment. The blood-pressure has fallen slightly, but is still high. The other symptoms have greatly improved.

*Ophthalmoscopic examination*.—Fig. 2 illustrates in a general way the present condition of the right fundus. (28th October, 1907.)

It will be noticed that while the hæmorrhages and exudates seen in the first drawing have all disappeared, fresh ones have made their appearance during the present relapse. None of these were present when he was seen on 26th September. The veins are now larger and more tortuous, and their terminal twigs are much more complex in their branching. One of these twigs shows a globular swelling which looks like an aneurysm. The arterial aneurysms are all gone, and their place is partly occupied by brilliant white spots of tissue in the arterial walls. The two small aneurysms noted as new at the examination on the 26th September have also disappeared, and the small vessel on which they were found has regained its former calibre. The vessel in question is, on the whole, narrower and more definitely "silver wire" in appearance. The first branch of the lower temporal artery is represented by a white band practically from its origin to its termination, but the whiteness of it is not equal at all points. Changes in the other arteries, chiefly in the form of irregular constrictions of the lumen, are also present.

The case is of interest—

1. Because it shows practically all the evidences of arterial sclerosis found in the retina. These changes are probably toxic in origin.

2. Because it shows how much the hæmorrhages and other retinal changes depend on the state of the general disease, and how entirely they may disappear under appropriate treatment.

3. Because of the presence of the arterial aneurysms which are very rarely seen.

4. Because these aneurysms are seen to have disappeared

even while the high blood-pressure, which probably contributed to their formation, was maintained.

5. It will be noted further that, with the exception of the disappearance of the aneurysms, there has been no improvement in the vascular changes, which have rather progressed.

The first record of a retinal aneurysm observed ophthalmoscopically was made by Sous<sup>1</sup> in 1865. In his case there was a single large aneurysm occupying the lower half of the disc. Since then a number of other cases have been reported, among others, by Poncet,<sup>2</sup> Litten,<sup>3</sup> Story and Benson,<sup>4</sup> Schmall,<sup>5</sup> Gowers,<sup>6</sup> and Oeller.<sup>7</sup> Of these, only the case described and illustrated by Gowers closely resembles the one here referred to. The patient was a woman, aged 36, suffering from chronic renal disease. Ophthalmoscopically, there were optic neuritis, hæmorrhages, white spots, and arterial changes, and a reference to Gowers' plate will show that one of the arteries presented several small globular dilatations very similar to those in our case.

Poncet's case was one of glaucoma with "miliary retinal aneurysms." Litten's was a man of 56, with simultaneous hæmorrhages in the retinæ and brain. *Post-mortem* small aneurysms were found on the cerebral arteries visible to the naked eye, but those on the retinal vessels were only seen microscopically. In the other four cases the aneurysms were observed ophthalmoscopically. In the cases described by Story and Benson, and by Oeller, there were both globular and fusiform dilatations of the arteries, with fusiform dilatations and varicosities of the veins, and these vascular changes were associated with "retinitis proliferans." There does not appear to have been any renal disease in either case.

Schmall's case was a man of 67, suffering from great dilatation and hypertrophy of the left ventricle, due to aortic stenosis and regurgitation. The superficial vessels were tortuous and rigid, and there were symptoms suggesting a similar state of the cerebral vessels. There was no renal disease. One branch of the central retinal artery presented a marked fusiform

<sup>1</sup> Sous, *Annal. d'Oculist*, 1865, quoted by Warlomont and Testelin (French edition of Mackenzie, vol. iii., p. 555).

<sup>2</sup> Poncet, *Gazette des Hôpitaux*, 1876, p. 261.

<sup>3</sup> Litten, *Berlin. klin. Woch.*, 1881, p. 25.

<sup>4</sup> J. B. Story and A. H. Benson, *Trans. Oph. Soc. of United Kingdom*, 1883 and 1886.

<sup>5</sup> B. Schmall, *Archiv für Ophthalm.*, vol. xxxiv, p. 37.

<sup>6</sup> Gowers, *Medical Ophthalmoscopy*, plate x, fig. 1.

<sup>7</sup> Oeller, *Atlas of Ophthalmoscopy*.



aneurysm just beyond the disc margin as well as white lines along its borders.

In our case the disappearance of the aneurysms was rather remarkable, but the same change is described as having occurred in the cases of Story and Oeller, although in other respects the cases were not comparable.

It is unfortunate that in most of the cases hitherto reported, the general state of the patient has been omitted or incompletely recorded, and it would be interesting in future cases of the kind to have these records as complete as possible, including measurements of the blood-pressure.

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### THREE CASES OF SEVERE INJURY AT THE ANKLE-JOINT.<sup>1</sup>

BY ALFRED A. YOUNG, M.A., M.B., C.M.,  
Assistant Surgeon, Western Infirmary, Glasgow.

I SHOULD like first of all to bring in for your inspection the three cases of severe injury at the ankle-joint, noted in the billet, to let you see how very little deformity exists and how well the function has been restored. The first case is one of fracture of both malleoli. The second, one of fracture of the lower end of the fibula with very marked dislocation of the foot backwards and outwards. The third case is one where I removed the astragalus fifteen months ago on account of a severe compound dislocation of the ankle-joint.

CASE I.—The skiagram shows a fracture of the fibula, beginning some distance above the tip of the external malleolus and extending downwards and inwards into the ankle-joint; while at the same time the tibia shows a somewhat oblique fracture involving the joint and separating the entire malleolus from the rest of the bone.

The injury was produced by the patient (æst. 40) slipping on a stair, the foot "doubling-up under her," and being twisted, as she thinks, outwards. She was wearing a stout lacing boot at the time, and, though she felt something crack, there was no marked deformity of the foot when she picked herself up.

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 15th November, 1907.



FIG. 1 (Case I).

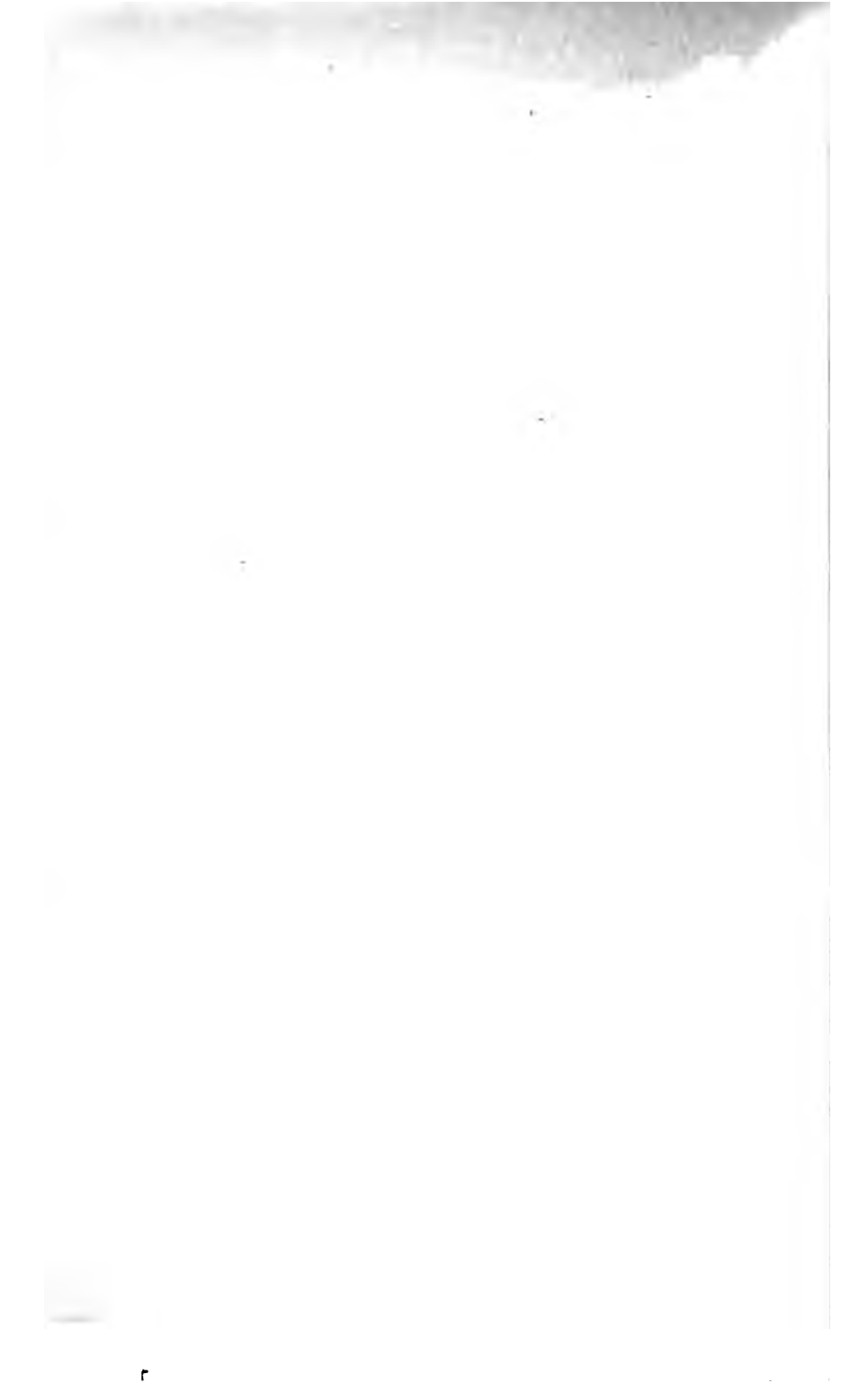
**Fracture of both malleoli. Massage; no splint. Left hospital four weeks after injury, and went about house freely six weeks after injury.**





Fig. 2a (Case 11).

Fracture of fibula and dislocation of foot backwards and outwards, with very marked eversion of foot. Reduction under chloroform. Splint and massage for two weeks. Massage for three weeks longer. Resumed work eight weeks after injury.

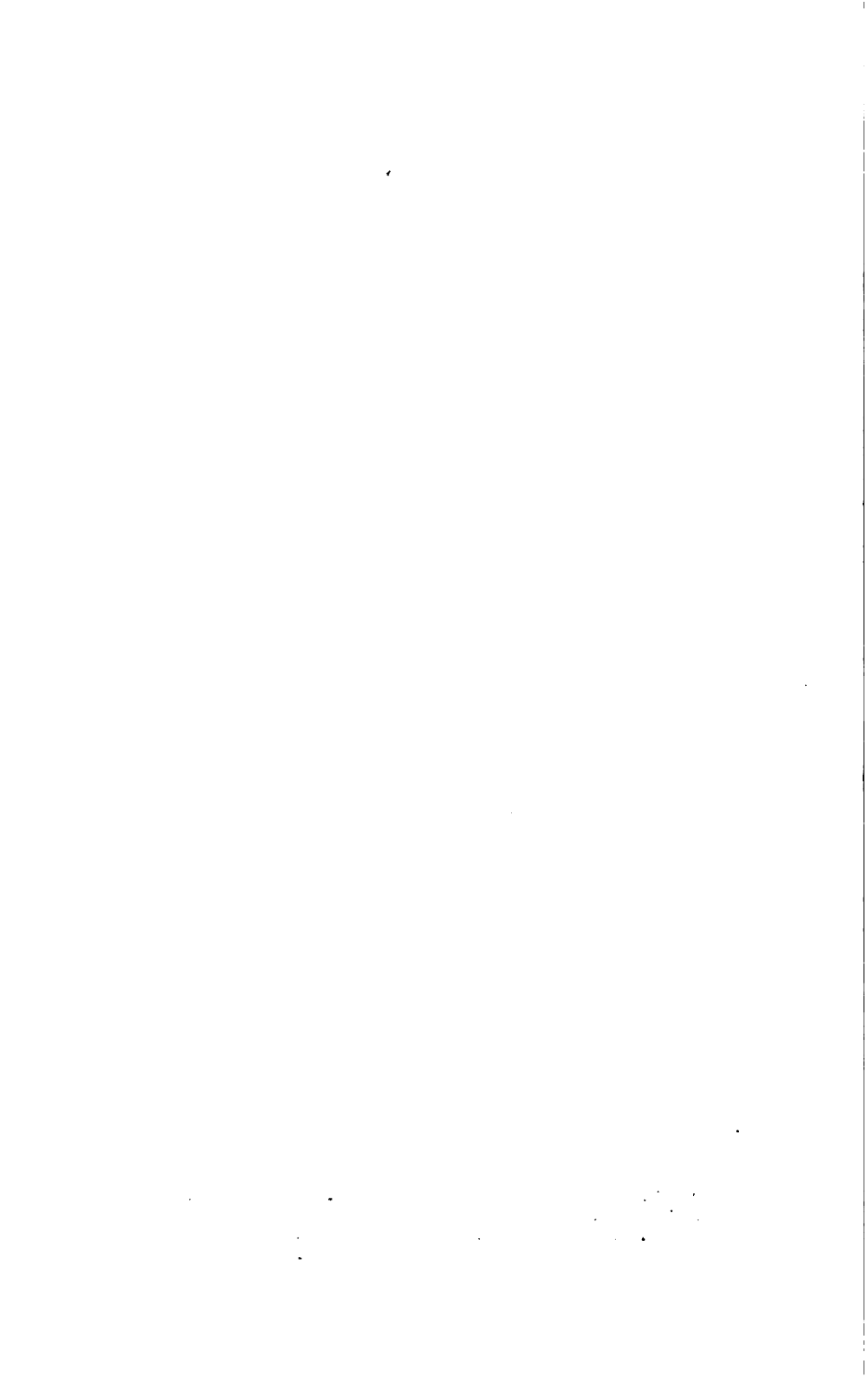


*Fibula  
broken.*



FIG. 2a (Case II).

**Fracture of fibula and dislocation of foot backwards and outwards, with very marked eversion of foot. Reduction under chloroform. Splint and massage for four weeks. Massage for three weeks longer. Resumed work eight weeks after injury.**



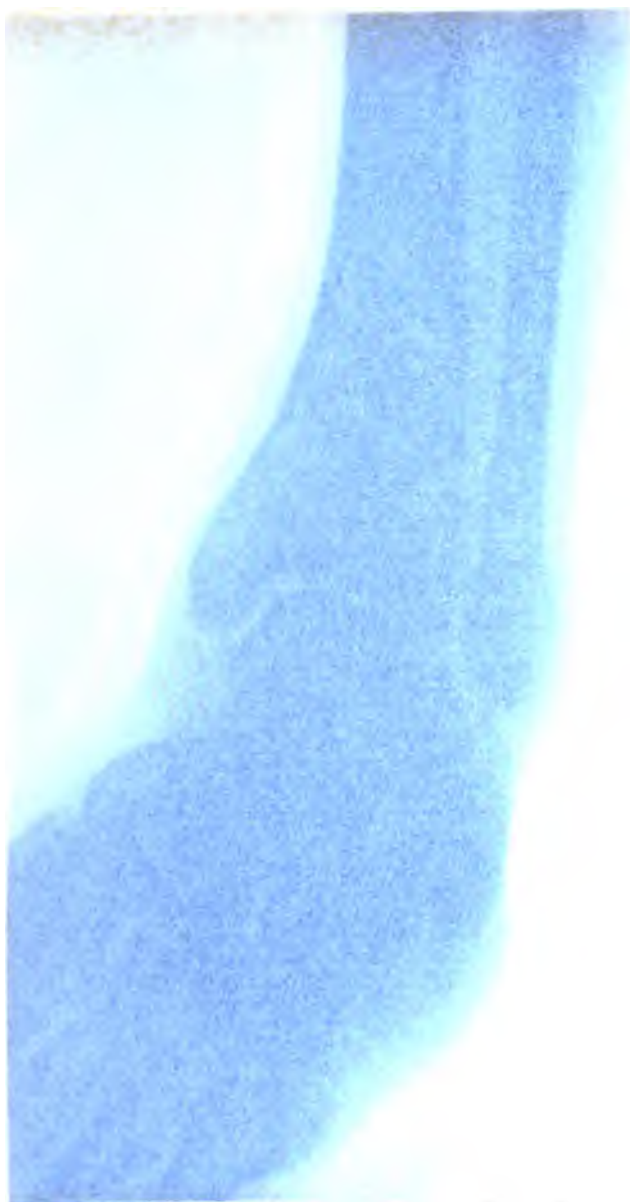


Fig. 26 (Case 11).  
Three days after injury.



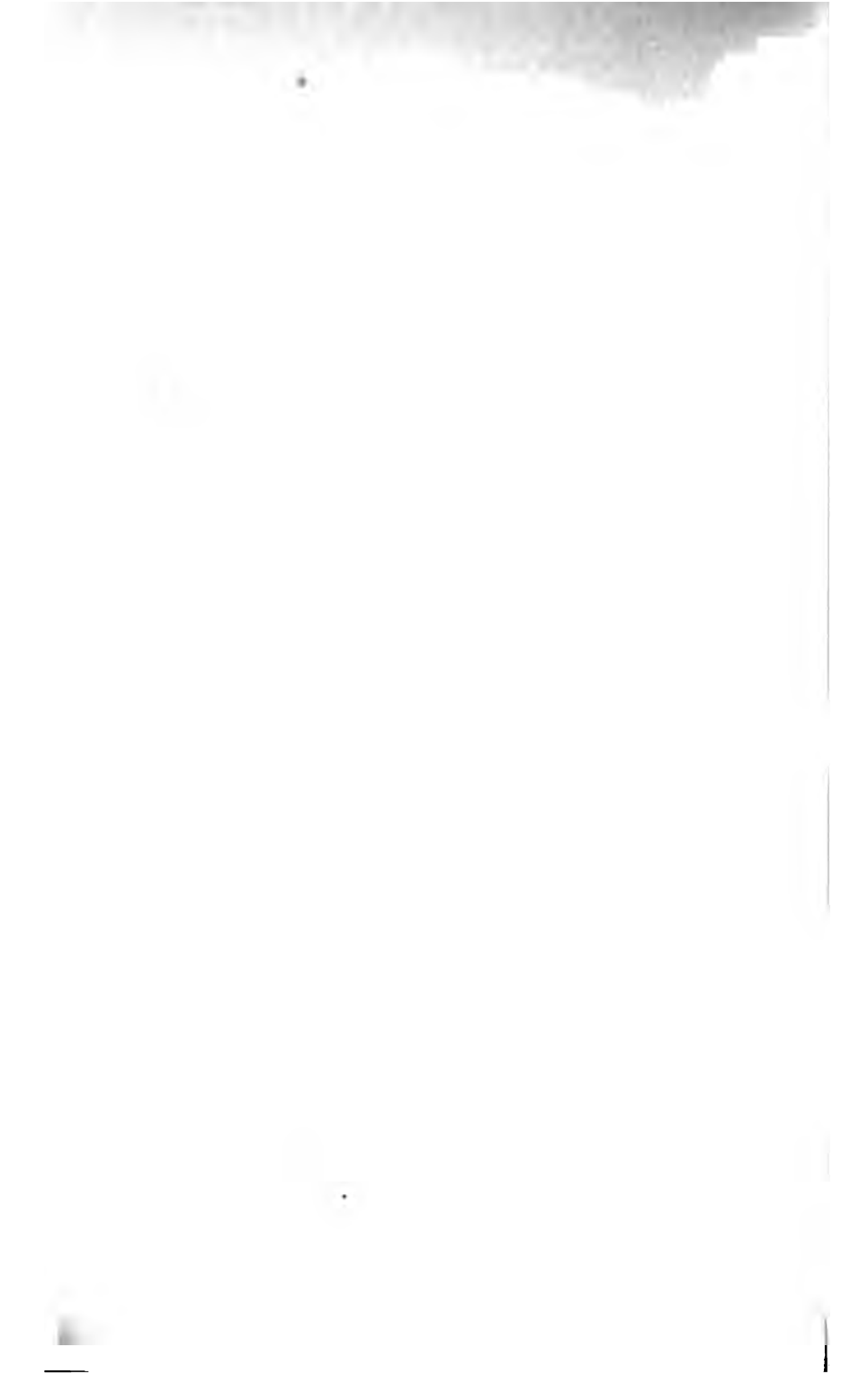




FIG. 2b (Case II).  
Ten days after injury.



On admission to hospital some hours after the accident there was great swelling about the ankle, with effusion into the joint and surrounding soft parts, and extending some distance up the leg. Crepitus and unnatural mobility were made out with difficulty. As there was no tendency to displacement, the limb was steadied by sand pillows, and no splint was used. Massage was begun next day for a few minutes night and morning, and was continued twice daily for some weeks, the time of each application being gradually increased. The pain and tenderness, which were very marked at first, soon subsided, and at the end of a fortnight the effusion was practically gone. At the end of four weeks she went home, and a fortnight later was able to go about her household duties as well as ever.

CASE II.—This case may be considered as a very exaggerated instance of Pott's fracture. The mode of production was the same, the lower end of the fibula was broken, the internal lateral ligament doubtless torn, the foot very markedly everted; but instead of the slight backward displacement of the foot, there was a complete dislocation of the tarsus backwards and outwards.

The skiagram taken on admission to hospital shows the deformity very well. The second skiagram, taken ten days after reduction under chloroform, shows the bones in good position. The limb was kept in position on a half-box splint for a fortnight, and thereafter the splint was removed daily to allow of massage. At the end of the four weeks the splint was dispensed with, and the leg massaged daily.

The patient left hospital at the end of seven weeks, and was able to resume work as a quay labourer eight and a half weeks after the receipt of the injury.

CASE III.—This patient, a young man, fell from a scaffolding while at his work, and when admitted to hospital his foot was very markedly inverted, the sole looking almost directly inwards, and there was a wound opening into the ankle-joint, obviously made by the external malleolus tearing through the skin which had been tightly stretched over it. The parts were carefully disinfected by the house surgeon, and the foot got into better position. Next morning when I saw him the astragalus could be distinctly felt projecting on the outer and anterior aspect of the tarsus, and the skin over it was very tensely stretched. I cut down on it and removed the bone, which was free from all its attachments. The wounds healed

satisfactorily, and without any sloughing of skin, as had been feared owing to the severity of the injury.

The ankle was very stiff for some time, but the patient persevered in moving it, and now (fifteen months after the injury) he is able to go to his work and walk with comfort. The spring of the foot in walking is slightly impaired, but there is a fair amount of flexion and extension at the ankle-joint, and he is able to raise himself on his toes.

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**MEDIASTINAL CANCER, OCCURRING TEN YEARS  
AFTER REMOVAL OF THE BREAST, WITH SECOND-  
ARY NODULATION WELL DISTRIBUTED OVER  
THE HEAD AND TRUNK.<sup>1</sup>**

By J. SOUTTAR M'KENDRICK, M.D., F.F.P.S.G., F.R.S.E.,  
Assistant to Professor of Medicine, Glasgow University; Dispensary Physician,  
Glasgow Western Infirmary.

THE following case may be of interest, as it affords an example of the considerable duration of time that may elapse between the removal of cancer of the breast and its recurrence. Not only so, but the case presents several interesting features both in pathology and treatment.

The patient, A., unmarried, and over 60, was first seen by me in October, 1904, for slight breathlessness and a hard, brassy, paroxysmal cough. Neither of these symptoms at the time affected her general health, and she was wholly unaware of suffering from any serious ailment. She gave me the following history:—

In 1893 her right breast had been removed owing to a swelling that had appeared in it. This proved to be a cancerous tumour. The operation was considered successful, and a large portion of the adjacent tissues was removed to ensure complete extirpation. She remained perfectly well until the summer of 1903, when she developed a cough and had an attack of right-sided pleurisy. The pleurisy disappeared, but the cough remained and increased in force and frequency up to the time I saw her. In November, 1904, she caught a chill and she had a smart attack of pleurisy over the left infra-axillary region.

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 29th November, 1907.

She rallied in a few weeks, but repeated examination during her illness made me suspicious of mediastinal growth involving the deeper structures at the root of the left lung. The parts were viewed on a fluorescent screen, but nothing very definite could be made out.

She remained in tolerably good health until the spring of 1906, when she had a relapse. The cough was more troublesome, and a few painless nodules were discovered on the skin. Two of these were on the top of the head; one on the right, and two on the left suprascapular region.

At this stage she consulted both a consulting physician and consulting surgeon in London, who considered that the nodules were secondary growths, the result of dissemination of small foci from the original growth. They thought that the skin nodules indicated an acute infection, and were of opinion that the patient had only a few months to live.

I had a Roentgen photograph taken of the chest at this time, and it showed diseased structure in the upper part of the left lung.

The patient was advised to undergo a systematic course of Roentgen ray treatment, to be applied to each nodule and to the chest itself. In a month or two it became apparent that the treatment was advantageous, for the nodules gradually disappeared leaving only a little thickening of the skin. The patient's health likewise improved, and little, if any, loss of weight had occurred.

In the spring of 1907 the patient had a sudden attack of fever, with general weakness and disturbed digestion. This was considered at the time to be influenza, but from what has happened since I feel sure that the symptoms depended upon an outburst of the original disease. The cough was more troublesome; the breathlessness, amounting at times to orthopnoea, was very great and brought on with the slightest exertion. The heart sounds were weaker, and many fresh nodules made their appearance in the skin.

Another Roentgen photograph was taken, which showed more clearly the lesion in the left lung. The Roentgen rays were again applied to the chest and nodules. The nodules improved under the treatment as before, but the patient's general health was not maintained.

The following is the report of the patient's condition at this time:—

The patient is a spare woman, with a sallow complexion. The mucous membranes are pale; the conjunctivæ are pale, but not bile-tinged. The pulse is soft but regular. The breathing

is embarrassed, and on each inspiration the muscles of respiration are brought into play. Breathing is hurried and is interrupted at intervals by a prolonged hard cough unaccompanied by expectoration. The coughing is paroxysmal, with stridor, and always followed by dyspnoea and exhaustion. During these attacks of coughing the veins in the neck become very prominent, although they do not wholly disappear to view in the intervals between them. The voice is clear; the pupils are equal, and react normally to light and accommodation. The radial pulses are equal on the two sides; the arteries generally are not atheromatous. There is no oedema. Over



FIG. 1.

the body are to be felt small, hard, slightly painful nodules, like peas, which in most cases are easily movable under the skin. At present the nodules exist as follows:—

1. Three small lumps, about the size of a pea, along the line of the sterno-cleido mastoid muscle on the left side. These are not glandular, but are in the skin.

2. A similar nodule on the right side under the temporo-maxillary joint.

3. A large nodule, about the size of a shilling, firmly adherent to the skin on the supra-clavicular region on the right side.

4. A nodule, about the size of an almond, in the fourth intercostal space, slightly outside the left nipple line.

5. A nodule, about the size of a pea, in the fifth interspace in the mid-axillary line.

6. A nodule over the outer portion of the clavicle on the left side.

7. A small nodule in the fourth intercostal space on the right side over the original scar formed at the time of the extirpation of the breast.

8. A nodule in the epigastrium slightly above and to the left of the umbilicus.



FIG. 2.

These nodules are depicted in the diagrams by the black spots. Other spots of a precisely similar character were present at different times before; but these, as I have already mentioned, wholly disappeared by the Roentgen ray treatment.

One other nodule existed inside the mouth to the outer portion of the lip on the left side. It was less shotty in character, and it infiltrated the tissue around. It was more painful, but the mucous membrane was not ulcerated over it. The tongue is normal; the teeth are good.

A laryngoscopic examination was not made, but I have no doubt there was some paresis of the abductor muscles of the



left vocal cord. There is constipation; the urine is passed normally. There has been no hæmoptysis or hæmatemesis or melæna, nor has there been any vaginal discharge.

*Lungs.*—There is no apparent flattening or bulging of the chest, but there is distinctly deficient movement over the upper part of the left side. V.F. and V.R. are greatly increased over this area, while at the extreme base these are diminished. There is a relative deficiency in the percussion note over the whole of the left lung, more especially, however, over the infra-clavicular region (seen by a large cross in the diagram). The respiratory murmur is slightly tubular over the apical and infra-clavicular regions, while it is almost wholly absent over the extreme base. A few rhonchi are heard. The right lung is normal. The lung condition briefly consisted in consolidation of the upper lobe, with pleural thickening, and possibly some effusion at the base.

*Heart.*—The cardiac area of dullness is normal, and the only abnormal feature on auscultation is marked accentuation and reduplication of the second pulmonic sound.

*Abdomen.*—The left kidney is movable; the liver and spleen are normal in size, and there is no swelling or tumour connected with any abdominal organ. A careful examination of the uterus and rectum was made to be certain of this fact. The urine is perfectly normal.

*Nervous system.*—All motor and sensory phenomena are normal; the knee-jerks are active but not exaggerated.

Such, then, was the report made by me in the spring of this year. There was little alteration in the symptoms and in the physical signs until September, when the disease became suddenly accentuated, and the patient died from acute involvement of the right lung. There was suffocative dyspnoea, and, finally, cardiac failure.

During this final illness the patient was under the care of Dr. M'Kerron, of Aberdeen, to whom I am indebted for notes of these latter symptoms.

The following *post-mortem* report was made by Dr. Duncan:—

"*Post-mortem* rigidity was well established in all extremities. *Post-mortem* lividity was slight. There was no marked emaciation.

"The scar left by the old operation for removal of the right breast was soft and pliable, with the exception of a small nodule felt about the centre. In the skin of the neck, just above the outer end of the right clavicle, there was a hard,

firm, flat nodule of the size of a large bean. The surface of the skin about the centre of this was reddened, and slightly ulcerated. A small hard nodule of minute size was found in the skin of the anterior abdominal wall to the right of the umbilicus. There was no enlargement of the superficial glands or deep glands in the axillæ and neck.

"On opening the thorax, the left pleural cavity was found to be obliterated by firm adhesions. The upper lobe of the left lung was congested, and showed scattered through its substance numbers of secondary nodules of new growth. The lower lobe of this lung was very extensively infiltrated by secondary deposits of new growth. The visceral and parietal pleura and the pleural surface of the diaphragm upon this side were very greatly thickened. The right pleural cavity contained several ounces of blood-stained serum.

"The right lung showed scattered nodules of new growth. Its upper lobe was partially solidified, and on section presented the greyish-pink appearance of croupous pneumonia. This hepatised portion of lung substance showed also several small pyæmic abscesses.

"The bronchial mucous membrane was congested, and the bronchi were filled with thick yellowish muco-pus.

"The posterior mediastinum was filled by a mass of enlarged glands, lying chiefly on the left side. This mass surrounded the bronchi and the base of the heart; it extended upwards to just below the top of the sternum, and appeared to have caused some slight curvature of the spinal column towards the right.

"The heart muscle was soft and flabby, and evidently fatty. The pericardium was free from signs of disease.

"The peritoneal cavity contained no fluid. The liver was slightly pushed downwards, but of healthy appearance. The spleen was not enlarged. The kidneys were normal. The stomach, intestine, and internal genital organs were healthy, as was also the pancreas. Along the spine around the abdominal aorta were several enlarged glands, some of which were of rather soft consistence and apparently suppurative.

"Microscopic examination of the enlarged mediastinal and abdominal glands showed the structure of a carcinoma of the mammary type; section of the nodules in the lungs, of the thickened pleura and diaphragm, and the nodule of the skin the neck presented a similar structure. The small hard nodule in the operation scar was found to consist of fibrous tissue.

"Death was evidently due to a terminal septic invasion of the right lung."

The above case speaks for itself, and I wish now briefly to refer to some of the more interesting features.

1. *The pathology.*—We have good reason to suppose that the primary cancer of the breast was not wholly removed. A recurrence took place after many years' of apparent cure, when secondary metastases manifested itself, first in pleurisy of the right side, and then in the involvement of the glands in the posterior mediastinum. Symptoms of tumour in the mediastinum were evident. From there an extension took place into the left lung and pleura, and over a year before death an outburst of secondary cancerous nodules occurred in the skin, but not in the superficial glands.

There was an involvement of the abdominal glands as well; but the abdominal organs, such as the liver, spleen, kidneys, &c., were not affected. The interesting feature, then, is the escape of liver involvement and the abundance of secondary nodules in the skin.

Mitchell Stevens,<sup>1</sup> in an elaborate article on the dissemination of malignant disease by the lymphatics, gives diagrams to show how the disease is conveyed by the thoracic duct and the lymphatics generally. He shows how the glands in the left side, especially those in the infra- and supra-clavicular regions, are more often affected than those of the right. He mentions also how the thoracic duct may be actually occluded by the disease, or if not, how the disease may get into the general circulation, and cause embolic infection.

How can these skin nodules be accounted for? I think Stiles'<sup>2</sup> explanation is a satisfactory one—that the disease is often stationary as cancerous emboli in the smaller lymphatics, and that these ultimately invade the wall of the lymphatics, giving rise to nodules of cancer in the skin, which are quite distinct from the lymphatic glands.

The only two other cases similar to my own, which I can find in a hasty perusal of the literature, are described in Marmaduke Shield's<sup>3</sup> text-book on diseases of the breast.

The first case was reported by Byrom Bramwell,<sup>4</sup> who describes a woman with cancer of the breast, and who ultimately half year before death had numerous secondary

<sup>1</sup> Mitchell Stevens, *British Medical Journal*, February, 1907.

<sup>2</sup> Stiles, "Surgical Anatomy of Breast," *Edinburgh Medical Journal*, 1892, vol. xxxvii.

<sup>3</sup> Marmaduke Shield, *A Clinical Treatise on Diseases of the Breast* (Macmillan & Co.), 1898.

<sup>4</sup> Byrom Bramwell, *Edinburgh Medical Journal*, August, 1894.

nodules in the integument round the breast and over the trunk.

The second case was that of a woman, aged 36, who had scirrhus of both breasts. In this case secondary metastasis took the form of hundreds of little growths in the skin, which were hard, round, and free, and slipped about like foreign bodies under the skin.

2. *The recurrence.*—I do not intend to enlarge on this subject, as it falls more into the domain of surgery, but I think it interesting to note that recurrence took place in this case fully ten years after removal of the breast. Marmaduke Shield tells us that out of 48 cases where recurrences were delayed beyond the three year limit, 19 occurred between the fourth and eighth year, and the remaining 29 between the ninth and twenty-fifth year. He mentions also how sceptical Sir James Paget was of the apparent cures after the removal of the breast, for he (Sir James) seldom saw any cases surviving ten years without recurrence.

3. *The treatment.*—The first point of interest is the effect of Roentgen rays on the cancerous nodules. The rays caused in many instances their complete removal, leaving only a little thickened epidermis behind. This result has been noted before, but it certainly was most striking in this case. The rays on no occasion caused irritation of the skin, although they were applied over nodules daily for a long time, nor did they cause alopecia, or in any way affect the hairs.

The second point of interest was the effect of trypsin. The patient had heard much about trypsin, and I allowed it to be used in the hope that it might do good and that it could do no harm. Five-grain powders were given daily over definite periods. The only effect that this treatment had, to my mind, was that it assisted digestion, and thereby hindered cachexia and loss of flesh. Apart from this, I do not think it had any effect whatsoever on the cancerous disease.

On one occasion I injected into the arm a solution, prepared by Raimés, Clark & Co., of trypsin and amylopsin. The local reaction was so great and the constitutional disturbance so marked that the operation was not performed a second time.

I mention this as so much has been written lately both for and against the use of trypsin in cancerous disease.

The theory that trypsin had a curative effect on cancer was first described by Beard, but it did not arouse great attention until a remarkable paper written by Morton<sup>1</sup> claimed for it

<sup>1</sup> Morton, *Medical Record*, 8th December, 1906; Epitome, *British Medical Journal*, 19th January, 1907.

"cures" in certain cases. Morton used 20 to 30 mm. of a glycerine solution of trypsin, prepared by Fairchild, which he injected hypodermically into the cancerous tissue for four to six weeks. He then used injections of amylopsin for a few weeks. He describes a case of cancer of the breast so treated, which became atrophied and disappeared. Another case, where the glands were also affected, was cured in the same way. In all his cases there was considerable local reaction.

Bainbridge<sup>1</sup> had seen Morton's cured cases, and he has recently written disproving Morton's assertions that the cases were "cured." He believed that the trypsin by itself had little or no curative effect on the growths.

Leyden<sup>2</sup> thinks that trypsin improves the appetite, as it did in my case, and so he believes it helps to cure cancer, for he holds that cancer-growths and secondary metastases are retarded by improving nutrition.

Graves<sup>3</sup> used trypsin hypodermically in four cases of cancer of the breast with secondary nodulation of the skin. 20 mm. of Fairchild's solution—gradually increased to 40 mm.—were injected three times a week. His conclusions were as follows:—

1. Discrete nodules directly shrunk, and became fibrous.
2. The neighbouring nodules were not affected.
3. Trypsin only affected the cancerous growths by direct contact, and had no effect on cancer cells in the blood.
4. No bad results could possibly follow the injection of trypsin into inoperable cancerous tumours, and, therefore, in such cases trypsin should be given a trial.

<sup>1</sup> Bainbridge, *British Medical Journal*, 2nd March, 1907.

<sup>2</sup> Leyden, *Zentralblatt für die gesammte Therap.*, January, 1907.

<sup>3</sup> Graves, *Boston Medical and Surgical Journal*, 31st January, 1907.

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## Obituary.

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ALEXANDER FREW, M.B., C.M.

THE very sudden death of Dr. Frew, on the 12th of last month, must have come as a great shock to many. Though he had been for some time in indifferent health, he was able to be present at a concert on the night of the 11th. A man of varied gifts, a physician and an artist, he was also interested in botany, conchology, and archæology, and sometime ago he presented his conchological collection to the Hunterian Museum of the University. Dr. Frew leaves a widow, but no family.

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## CURRENT TOPICS.

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DEATH OF SIR THOMAS M'CALL ANDERSON.—As we go to press we have to notice the death of Sir Thomas M'Call Anderson, which occurred with startling suddenness at the conclusion of the annual dinner of the Ayrshire Society on the evening of Saturday, 25th January. We hope to publish a fuller notice of the deceased professor in our next issue.

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LORD LISTER AND THE FREEDOM OF GLASGOW.—On Tuesday, the 21st ult., the freedom of the city of Glasgow was conferred on Lord Lister, Lord Blythswood, and Mr. Cameron Corbett, M.P. The ceremony took place in St. Andrew's Hall in presence of a large and appreciative audience. The Lord Provost, Sir William Bilsland, Bart., called on the Town Clerk to read the minute of the Corporation conferring the honour on Lord Lister. The minute bore that the honour was bestowed on Lord Lister "for his brilliant achievements in the domain of surgical science." After it had been read,

THE LORD PROVOST, in the course of his remarks, said that

the freedom of the city carried with it now none of the material advantages attached to it in the old days, when no trade or craft could be carried on in the city without the consent of the Deacon and Master Court of the Incorporation concerned. The bestowal of the honorary freedom of the city, while it did not carry any exclusive privileges, was still a distinctive and significant honour, the highest the citizens of Glasgow had it in their power to confer. His Most Gracious Majesty the King, the Prince and Princess of Wales, and other members of the Royal Family had honoured the city by inscribing their names on the burgess roll. There also were the names of many noted statesmen, soldiers, scientists, explorers, and public-spirited and generous citizens. The freedom of the city was a gift rightly regarded by the Corporation as one that must be rarely bestowed, and then only as a civic appreciation of those who had served with great distinction the community, the nation, and the whole human race. In reference to each of the names to be submitted, nothing could exceed the cordiality with which the proposal to confer the freedom had been received, not only by the Corporation, but by the whole community. With regard to Lord Lister, whose absence through his advanced years and very feeble health they deeply regretted, they recalled with pride that it was while Professor of Surgery in the University of Glasgow and a visiting surgeon to the Royal Infirmary he achieved world-wide distinction as a scientist and a surgeon by discovering and perfecting the system of treating wounds, which had saved thousands of lives and greatly lessened human suffering. It had been well said that Lord Lister's work marked a new epoch in modern surgery, and his name would have an imperishable place alongside the greatest in his profession and among the noblest benefactors of humanity. While they were deeply impressed by the magnitude of the services he had rendered to mankind, the feature which most deeply impressed those who knew him best was the modesty and humility with which, in his most brilliant successes, he always recognised that it was by the Divine blessing he had been able to accomplish so much. He had added pre-eminent distinction to the city by what he accomplished there. He had said, to quote his own words, "The years spent in your genial city were the most productive and happiest of my life." He had also enhanced the prestige of our University through the students he attracted by his great work and inspiring personality, and the possibilities he opened out for them in the noble art of surgery. Lord Lister held orders and

medals from many European sovereigns and learned societies. Edinburgh and London had conferred on him their honorary freedom. It was therefore most fitting that they should emphasise their gratitude to so great a benefactor of humanity by having his name inscribed on the honorary burgess roll. It was exactly a century ago since the Corporation conferred the freedom of the city on another great pioneer in medical science, Dr. Edward Jenner, the discoverer of vaccination. In this function, therefore, they were following the example of their predecessors in doing honour to those who had done outstanding service to their fellowmen. Lord Lister had arranged that their esteemed citizen, Sir Hector Cameron, was to represent him that day, and he had great pleasure in now calling on him, as one of Lord Lister's brilliant students, his trusted assistant surgeon, and his lifelong friend, to receive the burgess ticket on behalf of his Lordship, and to read the message which, notwithstanding his very feeble health, Lord Lister had been able to send.

SIR HECTOR CAMERON said he felt he would best discharge the honourable duty which had been laid upon him by simply reading, without any comments of his own, the letter which Lord Lister had commissioned him to communicate to his Lordship. It was as follows:—

MY LORD PROVOST,—The freedom of the city of Glasgow is an honour justly held in the highest estimation. I greatly regret that the state of my health prevents me from expressing in person my gratitude for this great distinction, and I appreciate very highly the kindness of yourself and your fellow-magistrates in offering to confer it on me *in absentia*.

This is far from being the first occasion on which I have had reason to be grateful to Glasgow. Arriving there on my appointment by the Crown to the Chair of Surgery with only one personal acquaintance in the city, the late Professor Allen Thomson, I was welcomed with the utmost cordiality by my colleagues in the University, and received abundant kindness from the genial citizens of the Western Metropolis. Having been in due time elected by the managers of the Royal Infirmary as surgeon to that institution, I experienced uniform consideration at their hands when applying to the treatment of wounds the great truth which had been recently revealed by the illustrious Pasteur regarding the nature of fermentative changes in organic substances. That truth, though it seemed to me to shine clear as daylight from Pasteur's writings, was for many years not generally recognised; and thus it was my privilege to witness in my own practice, as the application of the principle became greatly improved, the revelation of pathological truths of fundamental importance and a revolution in practical surgery; and



I look upon the years spent in your city as the happiest period of my life.

The old infirmary is now giving place to more commodious buildings, and great as must necessarily be the expense of this undertaking, I do not doubt that the proverbial liberality of Glasgow will prove fully equal to the occasion.

The reading of the letter was received with applause.

The LORD PROVOST then presented the freedom of the city to LORD BLYTHSWOOD, who, in his reply, paid a tribute to Lord Lister. In all the long line of burgesses, he said, who adorned the Valhalla of their roll no name would stand out more magnificently in future ages among the statesmen, soldiers and sailors, and others who had gained their fame in arts and science than that of Lord Lister. The gratitude of the universe was due to Lord Lister, who, by his wonderful acumen and knowledge, had assuaged the afflictions and pains of thousands of his fellow-countrymen—aye, of thousands all over the earth. Men who had never known the name of Lord Lister blessed him for their lives.

Luncheon was subsequently served in the Banqueting Hall at the City Chambers. In submitting the toast of "Our Youngest Burgesses,"

The LORD PROVOST said that he would ask the company to think of the honour conferred on Glasgow in the recent additions to the honorary burgess roll. In regard to Lord Lister, some other places had a right to claim him as theirs, but none had a better right than Glasgow, because they had it on his own authority that in Glasgow he spent the most productive and the happiest days of his life. He trusted that in other ways Lord Lister's name might be permanently associated with the scenes of his great work, either in a Lister Block or Lister Ward in the reconstructed Royal Infirmary, to which Lord Lister made an appropriate allusion in his message to them that day, or in a Lister Chair of some branch of surgery associated in one way or another with their venerable University. In submitting his name in this toast as one of their youngest burgesses, he could not find more fitting language than the words used by Mr. Bayard, a former United States Ambassador, at a Royal Society dinner, when he said, in addressing Lord Lister, "My Lord, it is not a profession, it is not a nation, but it is humanity itself that with uncovered head salutes you."

SIR HECTOR CAMERON, in acknowledging the toast on behalf of Lord Lister, said—

"My Lord Provost, my Lords, Ladies and Gentlemen,—It

is indeed a high distinction to be called upon, on an occasion like this, to respond on behalf of an old and honoured master. I can assure you that Lord Lister regards with profound gratitude the honour which has been conferred upon him to-day. It touches a tender part in his heart, for it carries him back to his days of youthful vigour and of active and inspiring work. John Bright once defined happiness as 'congenial occupation with a constant sense of progress.' If this be true, no man was ever happier than Lord Lister when he lived in this city, for there unfolded then before him, almost day by day, new truths of paramount importance, and these, in their turn, suggested the possibility of devising methods of treatment, which his keen scientific foresight showed would be fruitful of untold benefits to suffering humanity in all time to come. I have heard the statement made lately, on more than one occasion, that the honour conferred to-day is a somewhat tardy and belated one, and that Glasgow should have made this recognition of his genius, and of the great service he has rendered to the human race, many years ago. My Lord Provost, I wish to assure you that, whoever so feels, it is not Lord Lister. Those of us who know him well, know that he has no more striking characteristic than that modesty which is, after all, the true mark by which one may distinguish real from spurious greatness. When great honours come upon him, as they have come in extraordinary profusion, from every country in the world, during the greater part of his life, they have always seemed to me to come with a sense, on his part, of surprise and unexpectedness. To me it seems, indeed, that as it was in this city that he first inculcated the principles and pursued the practice of that form of wound treatment which has renovated Surgery, and, by its world-wide adoption, has been the means of saving countless numbers of human lives, so there is a certain dramatic completeness in the fact that Glasgow should, in the end of his career, make her addition to that crown of honour which will for all time sit upon his brow.

"My Lord Provost, it will be to me a great pride and pleasure, when I see Lord Lister, as I hope to do very soon, to endeavour to convey to him some idea of how kindly and appreciatively you have referred to himself and his great and beneficent life-work in your speeches to-day, and to indicate to him, if I can, with what warmth and cordiality your words have been received by those citizens of Glasgow to whom you addressed yourself.

"It may be gratifying if I say, before sitting down, that although the infirmities which come with age have of late years lessened his bodily vigour to a degree which causes regret to all his friends, happily Lord Lister's mind, though possibly, like his body, more easily fatigued than it once was, is clear, active, and flexible as ever. Hence, in his honourable and distinguished retirement, he is able to follow with interest and pleasure the movements and the constant progress of that Science and Art of Surgery which he loves and has served so well, and to which he has so nobly paid that debt which every man owes to his profession.

"Grateful to God that he has been granted a long life, and the opportunity—seldom vouchsafed to mortals—of seeing in his own lifetime the full and marvellous fruits of his own early researches and labours, very grateful, too, to his fellow-men for their universal appreciation of all that he has done, he

'bides his hour,  
Though watching from a ruined tower,  
How grows the day of human power.'"

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**APPOINTMENTS.**—*University of Glasgow*: At a meeting of the University Court on 16th ult., George H. Edington, M.D., F.F.P.S.G., was appointed Assistant to the Professor of Clinical Surgery.

*University of Edinburgh*: At a meeting of the University Court on 20th ult., Alfred A. Young, M.A., M.B.Glasg., was appointed Additional Examiner in Clinical Surgery.

*Incorporated Dental Hospital, Glasgow*: John W. Renton, M.B., has been appointed one of the Anæsthetists to the Hospital.

**THE "DR. FINLAYSON MEMORIAL" LECTURE.**—The first lecture will be delivered on Wednesday, 26th inst., at 4 P.M., in the hall of the Faculty of Physicians and Surgeons, 242 St. Vincent Street. The lecturer, Dr. Norman Moore, of St. Bartholomew's Hospital, London, has chosen as the subject of his address "*Schola Salernitana*." Dr. Moore has been peculiarly happy in the choice of his subject, a choice which brings up to our minds our late colleague, who was never happier, or more in his element, than when engaged in unearthing and in verifying facts connected with the history of our profession.

The history of the mediæval school of Salerno is of unusual interest, and the Latin poem with the above as well as various other titles enjoyed great popularity during many successive ages. It has been translated into English on several occasions, and many editions of these translations have been published. There is no doubt that a new interest will be excited in the subject by its treatment at the hands of so eminent a scholar as Dr. Moore.

The chair is to be taken by Sir Hector Cameron, and all registered practitioners, as well as all subscribers to the Finlayson Memorial Fund, will be welcome.

**COMPLIMENTARY DINNER TO SIR GEORGE BEATSON, K.C.B.**—On the 10th of last month Sir George Beatson was entertained to dinner in the Grosvenor Banqueting Hall, on the occasion of the distinction recently conferred upon him by His Majesty the King. The chair was occupied by His Grace the Duke of Montrose, K.T., and the very large company was representative of the various organisations with which the guest is so prominently associated. In addition to many of the leading members of the medical profession, there were representatives of the Volunteer Medical Service, the Red Cross Society, the St. Andrew's Ambulance Association, and of public life generally.

In proposing the toast of the evening, the chairman referred in felicitous terms to Sir George's many and varied services to the community, and to the work which he had now been called to in connection with the Territorial Army.

In his reply, Sir George spoke of the kindness which he had experienced at the hands of the citizens of Glasgow. He looked on the honours he had received as a recognition, not of himself alone, but of the many able fellow-workers with whom he had been associated. He urged on all the necessity of working for the good of the nation, as regards both civil agencies and military institutions. So far as the latter were concerned, he hoped the profession in Glasgow would respond heartily to the call of the Director-General of the Army Medical Service in connection with the medical service of the Territorial Army. The memory of that evening would be to him a never-failing source of pride and pleasure.

**THE MEDICAL OFFICER OF HEALTH FOR GLASGOW, AND THE UNIVERSITY.**—Dr. A. K. Chalmers, the Medical Officer of Health for Glasgow, recently reported to the Health Committee that he had received an intimation from the secretary

of the University Court that that Court had resolved to institute two examinerships in connection with the Public Health Degree of the University, and had decided to offer him the examinership in vital statistics, &c. The committee, appreciating the honour conferred on the Medical Officer and his office, and on the Corporation, by the offer of the University Court, recommended that, so far as the examinership was concerned, the resolution of the Corporation prohibiting officials from accepting any position which would entail absence from work during business hours be suspended in his case. While there can be no doubt that the resolution of the Corporation is a wise provision against abuse, the Health Committee are to be congratulated on their present action as one which will benefit not only the University but the community.

**HONOUR TO A GLASGOW GRADUATE.**—Major John Norman Macleod, of the Indian Medical Service, has been appointed a Companion of the Order of the Indian Empire. Major Macleod, who is a son of the late parish minister of Govan, studied in the University of Glasgow, where he graduated M.A. in 1886, and M.B., C.M., in 1890. After serving as house surgeon in the Dundee Royal Infirmary, he entered the Indian Medical Service. Shortly thereafter he was appointed surgeon to His Excellency the Commander-in-Chief (Sir George White), and he is at present civil surgeon at Quetta. He holds the medal for service on the Indian frontier.

**ROYAL COMMISSION ON ANCIENT BUILDINGS IN SCOTLAND: APPOINTMENT OF A GLASGOW LECTURER.**—The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of a Royal Commission to make an inventory of the ancient and historical monuments and constructions connected with, or illustrative of, the contemporary culture, civilisation, and conditions of life of the people in Scotland from the earliest times to the year 1707, and to specify those which seem worthy of preservation. The Commission consists of eight members, with the Right Hon. Sir Herbert Maxwell, Bart., as chairman. Amongst the members is Dr. Thomas H. Bryce, Lecturer on Anatomy, Queen Margaret College (University of Glasgow), who, in addition to his professional reputation, is well known among archæologists.

## NEW PREPARATIONS, &amp;c.

**THE WORTH TOFFEE** (E. Worth, 95 Gathorne Street, Leeds).—Toffee is not only sweet but also meat, since it contains both carbohydrate in the form of cane sugar and fat in the form of butter. Those who desire an excellent toffee may be recommended to try the variety now before us. It is sold in 6d., 1s., and 2s. boxes.

*The following preparations have also been received:—*

**From Messrs. Burroughs Wellcome & Co.—**

1. *Tabloid Capsule Calcium Iodo-ricinoleate*, 3 grains.—A new salt, tasteless and odourless, containing a large proportion of iodine, and not affected by the gastric juice.

2. *Tabloid Capsule Sandalwood Oil*, 5 minims.

3. *Tabloid Capsule Terebene*, 5 minims.

4. *Soloid Black Mercurial Lotion*.—A convenient means of preparing a mercurial or black lotion. One, powdered and shaken with one fluid ounce of water, makes a lotion corresponding in strength of active ingredient to lotio hydrarg. nigra, P.B. The official preparation may be more closely approximated by the addition of 24 minims of glycerin to the fluid ounce.

**From Messrs. Knoll & Co., 8 Harp Lane, London, E.C.—**

*Bromural* (monobrom-isovalerianyl-urea).—A new nervine sedative and hypnotic, intermediate in its action between the bromides and valerian preparations on the one hand, and the trional and veronal group of hypnotics on the other. It exists in the form of white, almost tasteless crystals, which are soluble in hot water, ether, alcohol, and alkalies, but not readily soluble in cold water. Its sedative and hypnotic influence is attributed to the isopropyl group contained in the valerianic acid, and this is intensified by the binding up of the carboxyl group by means of urea, and by the introduction of bromine into the methylene group. A dose of from 5 to 10 grains may be given at night to induce sleep. The effect should be seen in less than half an hour, and wears off in from three to five hours.

**From Messrs. Parke, Davis & Co., London—**

1. *Egmol*: an emulsion containing 40 per cent of olive oil, combined with fresh eggs, and preserved by the addition of brandy.

2. *Emulsion of Petroleum with Hypophosphites of Calcium and Sodium*.—Each fluid ounce represents liquid petrolatum, 33½ per

cent; calcium hypophosphite, 8 grains; and sodium hypophosphite, 4 grains. Dose, 1 to 4 drachms.

3. *Cholelith Pills*, with the formula: acid sodium oleate,  $1\frac{1}{2}$  grains; sodium salicylate (from natural salicylic acid),  $1\frac{1}{2}$  grains; phenolphthalein,  $\frac{1}{3}$  grain; menthol,  $\frac{1}{10}$  grain. These pills are chocolate-coated.

4. *Black Wash Tablets*.

5. *Adrenalin and Chloretone Ointment*.

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1907-1908.

MEETING III (*continued*).—1ST NOVEMBER, 1907.

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*The President*, DR. WALKER DOWNIE, *in the Chair*.

#### II.—CASE OF IMPERFORATE ANUS.

BY DR. G. BURNSIDE BUCHANAN.

On Monday, 2nd September, 1907, a small baby, 2 days old, was admitted to the Western Infirmary with an imperforate anus. The child had been born at 3 o'clock on the preceding Saturday, and the defect was discovered later in the afternoon when the child was being washed. The doctor being apprised of this restricted the feeding to sugar and water, and sent the child into the hospital on the Monday morning. There were, consequently, none of the signs of intestinal obstruction which often make those cases so unfavourable for operation. The child was very small, and did not weigh more than a few pounds. The skin was very dry and wrinkled, and the shrivelled appearance betokened a want of liquid. There was a dimple at the site of the anus, about a quarter of an inch deep, but the fundus of this was at once evident, so that diagnosis was easy once the anus was seen. The ischial tuberosities were not perceptibly closer together than normal.

On the afternoon of admission an operation was performed to remedy the defect. Under light anæsthesia with chloroform

an incision was made in the middle line by successive sweeps of the scalpel into the depths of the pernieum, reaching from the root of the scrotum to the tip of the coccyx. A little below the skin surface the ring of the sphincter muscle-fibres was distinctly seen and cut across in front and behind, while the sides were retracted. About an inch or so further in the blind end of the anus began to appear as a rounded free sac distended with dark coloured material. It was soft and not very tense, but could be clearly distinguished. There was no sign of any cord of denser tissue between it and the skin, such as is said to exist in some of those conditions. The attachments, which were strong, were easily stripped off the coccyx and sacrum with the fingers and curved scissors, but those joining the rectum to the bladder were more difficult to separate, and in doing so a catheter which had been inserted penetrated the urethra near its exit from the bladder. The rectum had to be separated for quite 3 inches up from the perineal surface before the end could be brought down to the edges of the wound, but the peritoneal cavity was not opened. Four fixation stitches were inserted in the walls of the rectum, which was thus anchored to the edges of the anal wound; and the bowel was incised, when 12 oz. or so of meconium came out. The edges of the mucous membrane were then sutured all round to the middle part of the wound, and the extremities of the perineal insertion were drawn together. As soon as the effects of the anæsthetic had passed off, the child was given some diluted milk, which it drank with avidity.

Thereafter the child progressed favourably; it slept soundly, and took its food well, the bowels moved regularly, and the skin became soft and moist. The only trouble was a persistent leak of urine from the anterior part of the wound, resulting from the perforation of the urethra. A catheter was passed into the bladder once or twice without ever meeting with any obstruction. After a fortnight or so a silkworm-gut suture was inserted deeply into the tissues to try and diminish the leakage, as the urine was irritating the skin; but this proved ineffectual, and was removed in a couple of days. The leakage, however, from this time began to diminish, and by the time of dismissal on the 28th it had become quite insignificant. At this time the perineal wound had closed, and the edges of the mucous membrane had adhered firmly to the anal orifice, with only a little eversion of the mucous membrane at one side.

On 18th October the child was brought back for examination, when it was found to be healthy and much fatter, having gained  $1\frac{1}{2}$  lb. since leaving hospital. The urinary fistula had



been closed for some time, and there was absolutely no escape of urine by it.

### III.—ALBUMINURIC RETINITIS WITH VASCULAR CHANGES: ANEURYSMS ON RETINAL ARTERIES.

BY DR. A. J. BALLANTYNE.

Dr. Ballantyne's paper appears as an original article at p. 100.

### IV.—CASE OF SYRINGOMYELIA, WITH EYE-SYMPTOMS CHIEFLY UNILATERAL.

BY DR. A. J. BALLANTYNE.

R. M'G., male, aged 24. This patient, whom I show at the request of Dr. John M. Cowan, is of interest in that he presents a number of the recognised ocular symptoms of syringomyelia. His general symptoms are well pronounced, and need not be referred to here. They first made their appearance in the left arm, and they are still most marked there, and the eye-symptoms are largely confined to the left eye.

It can be seen at a glance that the left palpebral fissure is narrower than the right, the edge of the upper lid coinciding with the upper margin of the pupil. Voluntary movement of the eyelid is not interfered with.

The left pupil is smaller than the right. Both pupils contract on illumination and in near vision, but the right better than the left in both cases. The left pupil does not dilate in the shade, nor does it dilate on pinching the skin of the neck. These reactions are intact in the right eye.

There is slight enophthalmos or retraction of the eyeball on the left side.

These three symptoms are evidences of paralysis of the sympathetic supply to the muscles of the left eye, and this can be confirmed by instillation of cocaine, which produces no change in the size of the pupil, while it dilates the pupil on the healthy side. It does, however, dilate the left palpebral fissure slightly, but not to the same width as the right. The actual measurements are as follows:—

	Right.	Left.
Palpebral fissures, . . .	10 mm.	6·5 mm.
After 5 per cent cocaine, .	12 mm.	9 mm.
Pupils, . . . . .	3·5 mm.	2·5 mm.
After 5 per cent cocaine, .	5·5 mm.	2·5 mm.

Ophthalmoscopically both discs are abnormally pale, and the left more so than the right. There is also some depigmentation of the choroid round the disc in each eye, but no alteration of the vessels or other evidence of a past neuritis.

With the perimeter there is shown to be distinct concentric contraction of the visual field for white and colours in both eyes, much more definite, however, in the left. The contraction affects the white field even more than the red and green.

Nystagmoid movements were found in the left eye on lævoduction.

Movements of the eyes are normal, and no muscular defect was detected by diplopia tests.

Vision is slightly weaker in the left than in the right for distance, but perfect in both for near. There is no defect of central colour vision. Convergence and accommodation are normal. Corneal sensibility is normal, and there is no disturbance of lachrymation.

The symptoms referable to paralysis of the sympathetic are easily explained by the existence of a syringomyelic cavity in the cervico-dorsal region of the cord, but the explanation of the other symptoms is still uncertain.

Optic neuritis, consecutive optic atrophy, and primary optic atrophy have all been recorded in cases of this disease. Optic atrophy of the simple type may have been due in some cases to a tabetic complication. There is no evidence of tabes in this case. It has been suggested that the optic nerve lesions may be due to internal hydrocephalus, which was found *post-mortem* in two cases with optic neuritis. The same complication has been offered to explain contraction of the field of vision and nystagmoid movements. The contraction of the visual field is held by some authors to be due to an hysterical element, but this would not explain it in all cases. There is no evidence of hysteria in the present case.

#### V.—CASE OF ANÆMIA WITH CHANGES IN THE SPINAL CORD.

By DR. T. K. MONRO.

Dr. Monro's paper is published as an original article at p. 81.

#### VI.—CARD SPECIMENS.

1. DR. J. GOODWIN TOMKINSON gave a microscopical demonstration illustrative of the following skin conditions:—

(a) Leprosy; (b) *acanthosis nigricans*; (c) *angio-keratoma*; (d) *porokeratosis* (Mibelli); (e) *blastomycetic dermatitis*; (f) *ichthyosis hystrix*; (g) *pemphigus vegetans*, &c.

2. DR. ALEX. MACLENNAN showed a fibro-adenoma removed from the breast of a young woman. It had been present for two years, and was about the size of a hazel-nut. Sections also were shown.

#### MEETING IV.—15TH NOVEMBER, 1907.

*The President, DR. WALKER DOWNIE, in the Chair.*

#### I.—INCISION AND DRAINAGE OF THE PERICARDIUM IN A CASE OF PURULENT PERICARDITIS ASSOCIATED WITH ABSCESS OF THE THIGH.

By MR. GEO. H. EDINGTON.

The liability of serous cavities to become implicated in the course of pyæmia is well known. The following notes on a case of pyæmic pericarditis show what may be accomplished by surgery in the treatment of this lesion.

*Summary.*—*Abscess upper part of thigh; eight or ten days later, pericarditis; incision of abscess; pericardotomy with resection of fifth costal cartilage; healing in five and a half weeks; infection due to staphylococcus aureus.*

John G., aged 8 years, was admitted to the Royal Hospital for Sick Children on 11th September, 1907, with a complaint of stiffness in right lower limb, and pain on walking, of fourteen days' duration. A few days before admission he began to be troubled with a frequent cough without expectation. No cause for either condition was known.

On admission he looked ill, and was of a yellowish hue. Pulse, 100; respirations, 44; temperature, 102.2° F. The respiration was embarrassed, and there was a frequent short cough. He kept the right hip flexed, and he cried when the part was handled. There was very distinct fulness at the back of the hip, and fluctuation behind the trochanteric region was easily obtained. On passive movement of the limb pain was complained of in the hip, and especially on the inner side. There was marked œdema of the leg, and tenderness along

the whole of the tibial shaft on pressure being made. The ankle was markedly swollen, and there seemed to be tenderness at the lower ends of the leg-bones ; but it was impossible to be certain of this, as handling of other parts also caused him to cry out.

On examining the chest, nothing abnormal was discovered in the lungs or pleuræ. The area of præcordial dulness was, however, much enlarged, extending to  $1\frac{1}{2}$  inch (4.5 cm.) to the right of the sternum, and  $1\frac{1}{2}$  inch (3.8 cm.) outside of the left nipple ; its upper limit reached the level of the first interspace. The apex beat could not be felt, and the heart sounds were dull and muffled. No friction could be heard.

A diagnosis was made of septic pericarditis, associated with acute osteomyelitis of the upper end of the femur, with abscess in the soft parts here, and with probable involvement of the hip-joint, and possibly a focus in the lower end of the tibia, involving the ankle-joint.

To clear up the first point, some fluid was withdrawn by the hypodermic syringe, the needle of which was introduced in the fifth intercostal space,  $1\frac{1}{2}$  inch outside the left margin of the sternum (Osler<sup>1</sup>). A stained film of this fluid showed numerous pus-cells.

*Operation.*—Chloroform having been administered, the abscess at the back of the hip was opened. The post-trochanteric region and the upper part of the shaft of the femur was easily felt by a finger introduced into the abscess cavity. No evidence of any connection between the abscess and the bone, or with the hip-joint, was obtained ; and it was not deemed advisable to explore in either of these directions. The cavity was packed with iodoform gauze, and a dressing applied to the wound.

Attention was next directed to the pericardium. A transverse curved incision, convex downwards, was made from sternum outwards towards the junction of the fifth costal cartilage with its rib. A flap of the soft parts was raised so as to expose the anterior portion of the fourth and fifth interspaces and the intervening fifth cartilage. The cartilage was cut through about 1 cm. from the edge of the sternum, and a piece about 2 cm. was resected. The triangularis sterni muscle was then cut through cautiously, the internal mammary artery being divided between two ligatures. The pericardium was easily recognised as a dead white fibrous structure ; it was picked up with forceps and opened. There was immediate escape of turbid serous fluid, followed by gushes of the same

<sup>1</sup> *Practice of Medicine*, 1901, fourth edition, p. 695.

during the expiratory efforts of coughing.<sup>1</sup> The apex of the heart seemed to be just under the opening in the pericardium; but the rapid movements of the organ to and from the surface of the body prevented a very accurate observation of this circumstance being made. A rubber drainage-tube 2 to 3 inches long (5 to 7.5 cm.) was introduced into the sac, passed horizontally outwards from the opening, and fixed by suture to the edge of the skin wound. The edges of this wound were loosely approximated by a few sutures, and a dressing was applied. The anæsthetic—chloroform with occasional substitution of ether—was taken well. A culture of staphylococcus aureus was obtained from the pericardial fluid and from the pus of the abscess in the thigh.

*Progress of case.*—There was a considerable discharge from the pericardial wound, and when the dressings were changed on the day after the operation it was more distinctly purulent. The tube was dispensed with on the 19th September (eighth day), and one month later the wound was soundly cicatrised.

The abscess of the thigh progressed satisfactorily towards healing, and the wound closed at same time as that in the chest-wall. It was thought that in view of the possibility of involvement of the hip-joint, extension should be applied to the limb. It could not be done, however, at the time of operation on account of the condition of the leg and ankle. The œdema cleared up without further event, and extension was applied about a fortnight after the operation.

The temperature fell to normal on the day following the operation. There were slight oscillations till the sixth day, from which time on it remained practically normal. The pulse during the six days after the operation ranged from 120 to 144; after this time it was generally between 120 and 130, although it was on several occasions as low as 110 and as high as 142. Respirations for first twelve days ranged from 32 to 46; afterwards mainly between 20 and 30. Pulse and respiration were not recorded after 6th October (twenty-fifth day).

At the end of October, examination of the hip showed the movements of the joint to be quite free, and extension was taken off. He was allowed out of bed on 2nd November, and has been going about since without trouble.

*Present condition.*—He walks well, and makes no complaint of any kind. Professor Samson Gemmell examined the heart yesterday, and reports that the apex beat is in its normal

<sup>1</sup> The amount of fluid was not measured.

situation. The cardiac systole causes no retraction of the chest-wall in the apex region. The præcordial dulness is of normal dimensions. On deep inspiration, the breath being held, the left border of præcordial dulness is found to move a short distance towards the middle line, demonstrating that the edge of the lung is not adherent to the pleura in this region. The heart-sounds present practically no departure from the normal.

I have brought this patient before the Society because, although neither the treatment nor the happy result is by any means a novelty, I believe that many of the members may not have had the opportunity before of seeing a similar case. The literature of the subject is already large, and I cannot refer to it at all fully here; but there are one or two papers in which much valuable information will be found.

Delorme and Mignon<sup>1</sup> have studied the subject of puncture and incision of the pericardium in great detail. They made a series of investigations into the topographical anatomy of the pleuræ and pericardium in thirty-five bodies; and from a study of their findings, and of the drawings with which their paper is embellished, we are forced to recognise the likelihood of wounding the left pleura in attempts to puncture the pericardium. This arises from the large proportion of cases in which the left pleural fold comes into relation with the sternum. Confining ourselves to the fourth and fifth interspaces and the fifth costal cartilage, we find these authors obtaining the following data.<sup>2</sup>

In the fourth interspace, the edge of the left pleura was within or at the left border of the sternum 17 times in 32. In the remaining fifteen cases, it was distant from the sternal border 2 to 50 mm.

At the level of the fifth cartilage, it was behind the sternum 15 times. In seventeen cases, it was to left of sternal border to a distance of from a few mm. to 60 mm.; but in nine of these cases it was distant from 5 to 20 mm. only.

In the fifth interspace, the sternum is (20 times in 32) no longer in relation with the pleura; but in twelve cases, the pleura was either in contact with the left border or actually behind it.

The authors lay great stress on these facts, and the details of the operation of puncture and incision which they recommend are based on the principle of avoidance of the pleura.<sup>3</sup>

<sup>1</sup> *Rev. de Chirurgie*, vol. xv, 1895, and vol. xvi, 1896.

<sup>2</sup> *Loc. cit.*, vol. xv, p. 822.

<sup>3</sup> *Loc. cit.*, p. 995.

Thus they introduce the aspirator needle through the sixth interspace<sup>1</sup> close to the margin of the sternum.

In opening<sup>2</sup> the pericardium they recommend resection of the fifth and sixth cartilages, detachment of triangularis from its sternal attachment, and retracting the muscle outwards, along with the internal mammary vessels which lie in front, and the pleura which is firmly attached to its posterior surface.

Roberts<sup>3</sup> agrees with Delorme and Mignon as to the likelihood of the left pleura being injured in the operation of the puncture of the pericardium, and he recommends that the aspirating needle be entered in the upper part of the left xiphoid fossa.

There is among writers on this subject some difference of opinion on the question of displacement outwards of the left pleura in cases of pericardial effusion. Fowler<sup>4</sup> states that this displacement does occur, and Mann<sup>5</sup> agrees with him. Roberts, on the other hand, agrees with Delorme and Mignon, that the firm attachment of the parietal pleura to the triangularis prevents the occurrence of displacement. If Fowler and Mann are correct, we can understand the reasonableness of Osler's<sup>6</sup> recommendation to puncture in the fifth interspace  $1\frac{1}{2}$  inch (4 cm.) from the sternal margin. This procedure is, however, irreconcilable with the views of Roberts and Delorme and Mignon. Le Conte<sup>7</sup> gets over the difficulty by presuming that the portion of the pleural sac which overlies the pericardium is probably obliterated as a result of the pericarditis; and that the needle does not in these cases actually enter the pleural cavity. Partly because of "the uncertain and varying relations of the pleura," Porter<sup>8</sup> believes pericardotomy to be safer than aspiration. The former operation is less likely to result in wounding the heart.

Writers would seem to prefer incision to puncture or aspiration for several reasons, viz., the heart is in some cases displaced forwards, and so is liable to be injured by the aspirating needle. Aspiration frequently requires to be

<sup>1</sup> If the sixth space be too narrow they go in through the fifth.

<sup>2</sup> *Loc. cit.*, p. 1003.

<sup>3</sup> *Trans. of Amer. Surg. Assoc.*, 1897, vol. xv, p. 114.

<sup>4</sup> *Ibid.*, 1896, vol. xiv, p. 161.

<sup>5</sup> *Annals of Surgery*, 1901, vol. xxxiv, p. 553.

<sup>6</sup> *Vide supra*.

<sup>7</sup> *Amer. Journ. Med. Sciences*, 1904, vol. cxxviii, p. 462.

<sup>8</sup> *Annals of Surgery*, 1900, vol. xxxii, p. 784.

repeated, and it may not empty the pericardial sac; and incision allows the operator to avoid with greater certainty wounding the pleura.

Again, statistics, so far as they go, favour incision. Delorme and Mignon's figures<sup>1</sup> are as follows:—Of 100 cases collected by them, 82 were punctured, with 54 deaths (death-rate, 65 per cent); 18 were incised, with 7 deaths (death-rate, 38 per cent).

Mediastinitis, with more or less disastrous effects on the heart, is mentioned as a sequel of pericarditis. On this point, Delorme and Mignon<sup>2</sup> state that in their autopsies the cellular tissue of the mediastinum had preserved its normal characters; but in one case the envelope of the heart was found covered over by a false membrane of a yellowish white colour, and forming a regular sheath for the pericardium.

I have to thank Dr. Dalziel for permission to report the case.

*Conclusion.*—The chief features of this case are—

1. Purulent pericarditis of pyæmic origin and without any pleural implication.

2. Neither by puncture  $1\frac{1}{2}$  inch to left of sternum nor by operation through the triangularis muscle was the pleura injured. It was probably unusually far from the edge of the sternum.

3. No perceptible impairment of the heart so far as he has gone.

4. The extent of the lesion in the lower limb could not be determined before operation. It proved ultimately to be less than had been supposed.

*Dr. W. K. Hunter* considered the prognosis of the case doubtful, notwithstanding the fact that the child seemed very well just now, and no abnormality could be made out in examining the heart. Cases of pericarditis, practically without symptoms, were met with which had subsequently got worse and died. On *post-mortem* examination, adherent pericardium—anterior mediastinitis and adhesions at the root of the vessels were found.

*Mr. Archibald Young* said that in a series of 35 cases by Roberts, 20 ended fatally, with pleural complications in 18, but in only 4 cases did this occur after tapping the pericardium; 15 cases recovered.

<sup>1</sup> *Rev. de Chirurgie*, 1896, vol. xvi, p. 62.

<sup>2</sup> *Ibid.*, 1895, vol. xv, p. 838.



*Mr. Edington* replied that he thought the prognosis in his case good. The fact that no pleural complication followed the puncture was due to the fact either that the pleura did not extend close to the sternum, or that the space had been obliterated by inflammation. He did not consider it advisable to preserve the costal cartilage, as its removal insured better drainage.

## II.—THREE CASES OF SEVERE INJURY AT THE ANKLE-JOINT.

BY DR. ALFRED A. YOUNG.

Dr. Young's notes on these cases appears as an original article at p. 104.

*Mr. Edington* referred to Mr. Arbuthnot Lane's strong advocacy of the operative treatment of fractures, but thought the cases shown by Dr. Young would confirm those of us who preferred to give older methods a trial. Referring to early massage in fractures, he thought the danger was union with deformity rather than non-union. He believed that the disability which followed fractures of the leg and ankle, and which might be permanent, was in most cases due to ignorance or carelessness on the part of the surgeon. If care were taken that the limb was put up with the foot at right angles to the leg, subsequent walking would be easy, and so the patient would be able to assist in the restoration of the normal movements of the joints.

*Dr. Alex. MacLennan* thought the most essential point was the rectification of the displacement thoroughly and as early as possible, and if the fragments were in good position the earlier massage was started the better.

*Dr. G. Burnside Buchanan* thought wiring was very necessary where it was otherwise impossible to keep the fragments in position. He also considered early massage and movements important.

## III.—CASE OF CIRRHOSIS OF THE LIVER IN A BOY 9 YEARS OLD.

BY DR. W. K. HUNTER.

Dr. Hunter's paper will be found as an original article at p. 89.

## IV.—CARD SPECIMENS.

MR. G. H. EDINGTON showed photographs of a case of mandibular cleft (macrostoma).

## GLASGOW SOUTHERN MEDICAL SOCIETY.

The Society met on 14th November, the President, Mr. A. E. Maylard, in the chair.

The first of a series of discussions which are to take place during the coming session was opened by Mr. Maylard, on the subject of "The Diagnosis and Treatment of Appendicitis."

Mr. Maylard's paper appeared as an original article in our issue for January, 1908, at page 6.

*Dr. T. K. Monro*, who continued the discussion, concurred with the President in his remark that the diagnosis of appendicitis is largely a differential diagnosis, and he emphasised the importance of the mode of onset of the symptoms in an individual who, from his age and otherwise, was a likely subject for the disease.

Rupture of tubal pregnancy, perforation of a gastric ulcer, tuberculosis, and mucous colitis were among the conditions from which a diagnosis might have to be made. Dr. Monro proceeded to give a convenient classification of the different types of appendicitis, and pointed out that, while fulminating cases, and cases with abscess, demanded immediate surgical interference, and while for relapsing cases surgical treatment was clearly indicated, there were many cases in which a first attack ran a favourable course and ended in recovery. For such cases he considered that thirty-six or forty-eight hours allowed by the President was unnecessarily short; but if after four days of appropriate treatment there was not a decided improvement he should recommend operation, though even then no abscess might be discovered. For mild cases he preferred to keep to the older method of moving the bowels by enemata rather than by saline purgatives. He further pointed out that operation, while often advisable and even indispensable, might be unsuccessful, and might be followed by grave and fatal complications.

The debate was continued by Drs. Barlow, Rutherford, Lindsay Steven, Edington, Lamb, Stewart, and others. A difference of opinion as to the time of operation after the onset of the disease existed between some of the speakers, while others advocated internal medication as being the proper treatment in many cases.

## GLASGOW NORTHERN MEDICAL SOCIETY.

At the monthly meeting held on 3rd December, 1907, DR. JOHNSTON, of Ruchill Hospital, gave a lecture on "Epidemic Cerebro-Spinal Meningitis," based on his experience during the recent epidemic.

Over a certain period 294 cases were admitted certified as suffering from cerebro-spinal fever, and 6 others were, on admission, found to be suffering from the disease. Of the 294 cases, 81 were not cerebro-spinal fever, 25 were probably cerebro-spinal fever, but the diagnosis was doubtful on account of the non-recovery of the specific micro-organism, and 194 were undoubted cases. The majority of the cases were under 5 years of age. The mortality-rate over all was 78·3 per cent. Of five patients over 40 years of age all died. Between the ages of 25 and 30 the death-rate was lowest. Under 5 years the rate was 81·1 per cent.

Dr. Johnston pointed out the value of lumbar puncture and examination of the fluid in deciding between cerebro-spinal fever and tubercular meningitis. As regards infectivity we are still much in the dark, but Dr. Johnston does not think the disease highly infective.

In treatment most reliance was placed on nursing. Five different brands of serum were used without any satisfactory result.

Numerous charts and photographs illustrating the course of the disease were shown.

At a meeting of the Society held on 7th January, 1908, DR. T. K. MONRO introduced a discussion on "The Treatment of Chronic Rheumatoid Conditions."

Dr. Monro said that rheumatoid arthritis, chronic rheumatic arthritis, rheumatic gout, arthritis deformans, arthritis nodosa, nodosity of the joints, and osteo-arthritis are some of the names that have been applied to a group of joint affections, but for purposes of discussion it would be necessary to distinguish half a dozen types, the first three of which would come under the designation of rheumatoid arthritis, and the last three under that of osteo-arthritis.

The first two types involve the smaller joints, such as those of the hand, and occasionally the larger joints. The first of these two types is acute, and difficult to distinguish from ordinary acute rheumatism. The second is chronic, and is

associated with striking wasting of the interosseous muscles of the hand and distortion of the digits. The disease in both types affects the synovial membranes and soft tissues about the joints.

The third type affects children before the second dentition, and is associated with enlargement of the lymphatic glands and spleen. It runs a chronic course.

The fourth type is the localised osteo-arthritis, often confined to a single joint, *e.g.*, the hip, when it may be accompanied by obstinate sciatica. Here the cartilages, bones, and synovial membranes suffer alike.

The fifth type consists of Heberden's nodes.

The sixth type is constituted by some cases of spondylitis deformans, or rigidity of the spinal column when it is due to osteo-arthritis.

Chronic polyarticular rheumatoid arthritis is occasionally due to infection from a septic focus, such as an ulcerating pile or pyorrhœa alveolaris. The treatment of such conditions is essential in treating the joint affections.

Diet in those cases should be generous, both in quantity and quality. Proteid, carbohydrate, and fat (cream, butter, and cod-liver oil) were all useful. Rest was necessary as long as there was pain, and patients often improved very much after long periods in bed.

Of drugs, guaiacol carbonate, arsenic, and iron were useful. For pain, salicylate of soda in small doses, aspirin, and occasional opiates were good. Locally, much relief comes from the application of methyl salicylate on lint under guttapercha tissue. Tallerman's hot air bath inducing active hyperæmia, and Bier's passively induced hyperæmia were useful. After the acute symptoms passed off, passive movements prevented the formation of adhesions. The waters and baths of Buxton, Harrogate, Bath, &c., were useful in convalescence.

The treatment of osteo-arthritis was much the same as rheumatoid arthritis, but great care was necessary in the use of passive movements.

In chronic articular rheumatism, guaiacum and sulphur with iodide of potash, iron, and arsenic should be used in conjunction with a generous diet.

Though the microbic theory of the origin of rheumatoid arthritis was still unproved, there were joint affections undoubtedly due to a microbe, notably gonorrhœal rheumatism. Here the important point was to cure the original lesion, and then proceed to neutralise the tendency to fibrous adhesions by the use of iodide of potash, guaiacum, &c.

## REVIEWS.

*The Laws of Health: A Handbook on School Hygiene.* By CARSTAIRS C. DOUGLAS, M.D. London: Blackie & Son, Limited. 1907.

THAT teachers and guardians of children should have a knowledge of the laws of health will be admitted at once. It is only about fifty years ago that, during a severe storm, the captain of an Irish steamer ordered some eighty or ninety passengers to go for safety below, and then battened down the hatches. On the ship's arrival at port, about a score of the passengers were found suffocated with bad air, due to the captain's want of an elementary knowledge of the vital dependence of the lungs on a supply of fresh air. A wiseacre of the same type on land, the governor of a prison, attempted what he considered a refined punishment by diminishing the daily dietary of, and exacting increased work from, some refractory prisoners. He thus created uncalled for exhaustion among his victims, and at least one death ensued. These flagrant, ignorant outrages on the laws of health are probably impossible at the present day in the same position of society, but we have reason to know that among the lower classes there is still much practical disregard of obvious rules with regard to the preservation of individual health and the diffusion of disease. Some mothers try to conceal the existence of measles in the house, and it is on record that farmers who have been stopped from poisoning the public with "enteric" milk, have retaliated by suing the local health authority for pecuniary compensation.

To get sanitary knowledge into the minds of the young is a duty of the State, and the training of teachers to enable them to instruct the pupils is therefore of primary importance. Getting little or no training at home in this branch of education, and there being no so-called religious difficulty in the school, human physiology and the laws of health should be taught to children in the public schools, the science of health being directly applicable to everyone's personal happiness and highest welfare. Carried into the domestic circles by the scholars, a general knowledge is bound to grow there regarding the functions of the body, the best meat and drink,

exercise and recreation, labour and rest, air and water, cleanliness of skin and clothing, and ventilation and drainage.

A teacher, carefully studying this book of Dr. Douglas's, would be qualified to convey to pupils all that they require in this line, and he would more easily find out the peculiarities of the dull boys, who, as Dr. Samuel Johnson said long ago, require the most attention.

The author's fifteen well-arranged chapters omit no important topic within the teacher's scope, and include no partisan disputations—the provision of meals, for instance, being dispassionately considered from all points of view. The various chapters deal with the internal arrangement, fittings, and heating of schools, the inspection of children in relation to personal physique and infectious diseases, disorders of the eyes, ears, throat and skin, consumption, rheumatism and weakmindedness, bodily exercise, feeding, and corporal punishment.

The limits of the book are set out in the preface, no pretence being made to instruct medical practitioners regarding the detection of heart disease, phthisis, and other internal complaints, such as are noticed in Dr. Leslie Mackenzie's more elaborate work on the medical inspection of schools; but a doctor reading the volume would probably refresh his memory on many points, and the general reader will get useful information and advice without any tincture of quackery.

Some good anatomical and sanitary illustrations, with a complete index, contribute to make this well printed and firmly bound book one of ready reference and easy reading.

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*Cancer of the Breast and its Operative Treatment.* By  
W. SAMPSON HANDLEY. London: John Murray. 1906.

OUR readers may perhaps remember that a little over two years ago (December, 1905) we published a paper read by Mr. Handley before the Glasgow Medico-Chirurgical Society, on "The Mode of Spread of Breast Cancer in Relation to its Operative Treatment." The present volume contains a full account of the author's investigations into the subject. He argues very fairly against the theory of embolism as a factor in visceral dissemination, and proceeds to show how this is accomplished by "permeation" of the lymphatics by the cancer cells. He then describes the operation which he advocates, and which is based on the facts which he has

demonstrated. The chief underlying principle of his method is removal of the deep fascia with its fascial lymphatic plexus; and he does not confine himself to the pectoral region, but includes the fascia over the upper part of the recti, and the upper part of the linea alba.

His views strike us as not only original but sound, and operations carried out on the principles which he lays down are likely to hold out a brighter prospect to the unfortunate subjects of mammary cancer than has hitherto been the case.

The volume is well written, and the text is illustrated by notes of many cases and by numerous figures of micro- and macroscopical appearances. It is the result of much careful work, and demands attention from all operating surgeons.

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*A Text-book of Diseases of Women.* By J. CLARENCE WEBSTER, B.A., M.D., F.R.C.P.Ed. London: W. B. Saunders Company. 1907.

THIS volume extends to 700 pages. It is strongly bound, and is printed in very readable type. The illustrations are abundant and lifelike, and, as a rule, add considerably to the ease with which the author's views are grasped. In many places, however, they might have been more carefully arranged in reference to the text which they are intended to illustrate.

The author's ideas, as indicated in his preface, are high, and they are fairly well attained throughout, though the merit of the work is in places uneven.

The opening chapters on the anatomy, histology, and embryology of the pelvic contents are unusually thorough. The section on uterine development, however, frequently forms very hard reading, and might have been more fully illustrated. The author differs from Kelly and others in the view that the chief support of the pelvic floor is muscular. In his opinion the pelvic fascia is of prime importance.

There is an excellent chapter on physical examination, which may be read with interest and advantage by even the most experienced of clinicians.

Among minor therapeutic measures, pessaries, massage, and electricity are discussed. The Hodge and ring pessaries appear to be almost the only ones the author recommends. His attitude towards electro-therapeutics is that of the watcher—probably the wisest position in the present state of our knowledge.

The discussion on the methods of preparation for both abdominal and vaginal operations is exhaustive. Chinesol, formalin, and creolin appear to be the antiseptics most in favour with the writer.

The treatment of post-operative complications is rather scrappy in places. If one were to judge by the space allotted them, shock and extraperitoneal hæmorrhage are matters of far less moment than we know them to be.

Vaginal section is regarded with an open mind. It is only to be preferred in uncomplicated cases, and where it appears that the work in hand can be equally well done by that route. Twelve indications for vaginal section are given, only one of which may be regarded as exclusive, viz., pelvic abscess, which is most easily reached in this way.

Most surgeons will not agree with the author in his discountenancing the use of rectal irrigation and the Fowler position in favour of abdominal irrigation in the treatment of general peritonitis.

There are excellent chapters on pelvic inflammation and injuries and displacements of the pelvic floor. The treatment of the latter by pessaries, however, is not well discussed.

The various affections of the ovaries and Fallopian tubes are unusually well discussed, excepting, perhaps, salpingitis, which is hardly so lucidly presented as are some previous subjects. The operative treatment of this condition is, however, extremely well written and thoroughly considered.

The description of endometritis in general, and of the acute purperal variety in particular, is deserving of all praise. In chronic endometritis the different histological appearances are mentioned without subdividing the whole subject into its ninety-nine text-book varieties, with their clashing and constantly reiterated trains of symptoms. To those commencing the study of gynecology this section should be invaluable.

The chapters on uterine displacements, fibromyoma uteri, and malignant diseases of the uterus are carefully written, and give a very complete exposition of the state of present knowledge on these subjects. The treatment of the various conditions is excellently discussed, the author, as usual, giving special prominence throughout to methods which he has found most frequently successful at his own hands.

The operations of ventral fixation and suspension of the uterus are discountenanced in favour of a modification of Dudley's method of shortening the round ligaments.

Ectopic gestation is especially well treated. The consideration is thorough, always to the point, and never



involved or lengthy. Indeed the author is quite at his best here, and has provided one of the clearest and most readable accounts of this difficult subject we have read.

There are closing chapters on appendicitis in its relation to pelvic disease, enteroptosis, and sterility in the female.

The merit of the work, though varying at times, is as a rule high throughout. Above all, however, it is no mere compilation. One receives in it the results of the wide personal experience of a keen and accurate observer, and as such it is a valuable contribution to the literature on the subject of diseases of women.

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*Outlines of Human Embryology.* By GEORGE B. SATTERLEE, M.A., M.D. London: Chapman & Hall, Limited. 1906.

THOUGH this little work does not present any novelty in substance or form, it is an improvement on others of its kind in that the text is more full and the illustrations better than in most "Outlines." The diagrams are plentiful and clear, and several excellent photomicrographs are reproduced. Blank pages are interleaved throughout the book for additional notes and drawings. This adds to its usefulness as an introductory or accessory handbook, and as such it is to be recommended for its thorough and concise handling of a subject which has become, in recent years, very wide and intricate.

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*First Lines in Midwifery: A Guide to Attendance on Natural Labour for Medical Students and Midwives.* By G. ERNEST HERMAN, M.B.Lond., F.R.C.P. With 83 Illustrations. New Edition. London: Cassell & Co., Limited. 1907.

To this edition, the fourth, the author has added two new illustrations and a chapter containing the rules of the Central Midwives Board, with explanatory comments. The text has also been revised, but we must confess that the revision has not brought it up to date. The advice as to the conducting of the third stage of labour is quite antiquated, and in reference to douching after labour and during the puerperium we are astonished to find that the author advocates this, and advises the use of a 1 in 2,000 mercurial solution by a nurse,

and, moreover, this is to be used with a syringe. He says that "in well managed lying-in hospitals a vaginal douche of 1 in 2,000 mercurial solution is given night and morning for the first three days, because it is during these days that the risk of infection is greatest." "After the first three days a douche of 1 in 4,000 is given until the lochia have stopped." This is a revelation to us, as we understood that in "well-managed" maternity hospitals this routine douching and interference with the natural processes had been entirely given up.

The work is well illustrated, and there is much that is good in it, but we are bound to add that there is advice in it which is antiquated in the light of our present-day knowledge.

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*Handbuch der Geburtshülfe.* In drei Bänden herausgegeben.

Von F. VON WINCKEL, in München. Dritter Band, 1 und 2 Teile. Wiesbaden: J. F. Bergmann. 1906.

VON WINCKEL'S handbook is the most comprehensive work on midwifery which has yet been published. There are eight large volumes, varying from 650 to 1,250 pages each. The two volumes under review form the sixth and seventh of the series.

The first one, called vol. iii, part 1, is a book of 900 pages, and treats entirely on the subject of Operative Midwifery. It begins with an interesting and helpful discussion by Wyder on the various aspects of operative treatment in general, including the instrumentarium, asepsis and antiseptics, assistance, position of the patient, &c. Then follows an exhaustive chapter on the induction of abortion and premature labour by Sarwey, which, however, contains nothing new.

In the section on Artificial Dilatation of the Cervix Uteri, Wyder states that the original enthusiasm for Bossi's dilator, called forth essentially by Leopold's recommendation of it, has now considerably diminished, especially in favour of the use of hydrostatic dilators and of vaginal Cæsarean section, but he thinks that Dührssen's opinion, that the instrument should be relegated to the museum, is scarcely justifiable, for it is of value in a limited number of cases where there is some pressing indication for rapid delivery especially in the interests of the mother. Wyder does scant justice to the bimanual method of dilatation of the cervix. Doubtless this prejudice is due to the recklessly rapid dilatation practised by those who have used this method in Germany. He states

that dilatation can, as a rule, be obtained by this method in five to ten minutes. No wonder the results are so unfavourable! An energetic protest ought to be made against such rapid dilatation, whether it be made by hand or by instrument, unless in specially favourable cases.

Von Winckel, in the section on Version, gives his experience of Braxton Hicks' method in 23 cases of placenta prævia. Out of this number 3 mothers died, one from long-continued hæmorrhage before the delivery, the second from infection caused by a tampon which had been introduced and left *in situ* for two days before delivery, and the third from tetanic contraction of the uterus during the operation and subsequent laceration of the cervix and vagina. The last is the only one which could be at all credited to the method of operation selected. The maternal mortality is, accordingly, very low, but in the same series of cases the infantile mortality was the reverse. Out of the 23 cases only 4 children survived. Von Winckel states that the method is not practised in Germany so much now as was formerly the case.

Krönig contributes the section on Perforation and Cranio-clasis. He strongly recommends Zweifel's cephalocranioclast, and urges after the birth of the head the performance of cleidotomy (division of the clavicles) should any difficulty be experienced with the delivery of the shoulder-girdle.

The article on Symphyseotomy is also written by Krönig. He is guarded in his recommendation of the operation. 78 cases have been gathered from the literature of the subject, and these give a mortality of 11.1 per cent. In the hands of skilled operators, however, the mortality is much lower. The chief objections to the operation are—(1) the tendency to injury of the vagina and bladder, and (2) the prolonged convalescence even in favourable cases. When the birth of the child takes place spontaneously after the symphysis has been divided, injury is much less likely to occur. In 11 cases in Zweifel's clinique there was no injury whatever. On the other hand, out of 14 cases in which the forceps was used after the head had entered the cavity, 3 suffered from laceration to the vaginal wall, and out of 9 cases in which the forceps was used with the head still in the pelvic brim, 2 suffered from injury to the bladder and 2 others from injury to the vagina.

Dührssen writes the chapter on Vaginal Cæsarean Section. Needless to say, he is enthusiastic in his praise of the operation. He has gathered from the literature notes on 201 cases

of the conservative operation, with a mortality of 13·9 per cent, and 47 cases of the radical operation, performed with one exception for carcinoma of the uterus, with a mortality of 10·6 per cent. After eliminating the deaths from eclampsia and its sequelæ, antecedent sepsis, &c., he states that only 4 out of the 248 cases died directly from the operation. In Dührssen's opinion, vaginal Cæsarean section is of such importance that it should be placed alongside the classical Cæsarean section, forceps, and podalic version. He adds that one advantage is that it can be performed in a private house with little assistance and with only slight preparation, but attention must be paid closely to the rules which he has laid down.

The other volume, consisting of about 1,250 pages, is devoted to the pathology and treatment of puerperal affections. The main bulk of the book treats on the important subject of Puerperal Fever. There are three contributors to this section, namely, von Herff of Basel, and Walthard and Wildbolz of Bern. Von Herff writes on the pathology and treatment, Walthard on the special bacteriology, and Wildbolz on the gonococcus. Two special features are the extensive bibliography, covering 77 pages with 2,300 references, and the numerous statistical tables giving the results recorded by the principal workers in the various lying-in hospitals throughout the civilised world.

Von Herff's conclusions are—(1) that since the introduction of sepsis and antisepsis the mortality from childbed fever has everywhere sensibly diminished, but that this decrease has for years come to a standstill, and (2) that, however regrettable it may be, still it must be emphasised that at present women who are confined in a properly conducted maternity hospital are in much less danger of childbed fever than those who remain at home, the very reverse of what formerly obtained.

As regards the mode of disinfection he is emphatic in his recommendation of alcohol. He says that no mode of disinfection which omits the use of alcohol is of any value. What he recommends is washing and scrubbing the hands and nails for five minutes with soap and water as hot as can be borne, and then rubbing the hands and nails for another five minutes with a cloth saturated with pure alcohol.

With a view to lowering the mortality from this dreadful scourge, he recommends the practice followed at Basel. There the midwives are paid fourteen shillings for each confinement they attend, provided the patient is too poor to pay the fee herself. In addition, the various materials necessary for

disinfection in such cases are supplied gratis by the municipality. The population of Basel is about 124,000, and in the years 1901 to 1904 the annual number of such cases attended by midwives was 681. The total cost to the municipality per annum was £490 for the attendance on the confinements and £40 for the antiseptics. As a further aid to the lowering of the mortality, von Herff recommends the foundation of places of refuge and also of charitable associations for the aid of poor puerperal women.

Throughout the volume the old terms *septicæmia*, *sæpræmia*, and *pyæmia* have been superseded by the more exact terms *bacteriæmia*, *toxinaemia*, and *embolic or metastatic bacteriæmia*. *Streptococci* are said to participate in the causation of about half of all cases of wound infection with *bacteriæmia* in the puerperium. In approximately one half of these cases the *streptococci* are mixed with such micro-organisms as the *bacterium coli* and the *staphylococcus*; in the other half they form the sole exciting cause. Unlike the *streptococcus*, many of the micro-organisms, and especially the *staphylococcus*, *diphtheria bacillus*, and *gonococcus*, have a greater tendency to excite local inflammation than to cause a general infection.

The work is strongly recommended to all engaged in obstetrical practice. Any of the volumes may be purchased separately.

*A Text-book of Genito-Urinary Diseases, including Functional Sexual Disorders in Man.* By DR. LEOPOLD CASPER, Berlin. Translated and Edited, with Additions, by CHARLES W. BONNEY, B.L., M.D., Philadelphia. With 213 Illustrations and 23 Full-page Plates, of which 7 are in Colours. London: Rebman Limited. 1906.

THIS work of Professor Casper's, which now appears in the English language, is divided into two sections. The first, or general, section deals with the examination of the patient, the anatomy and physiology of the genito-urinary tract, physical methods of examination, and examination of the urine. The subjects are presented in a systematic and very careful manner, and without any trace of "padding." The description of the urethra is perhaps too simple—*anterior and posterior portions, in front of and behind the triangular ligament respectively*. Then the triangular ligament is described as a layer of fascia, no mention being made of its being in two layers, with the membranous urethra between them. This

description is apt to confuse readers, for they will find that while the posterior urethra (membranous and prostatic) is a "pelvic" organ, the prostate is described as lying outside the pelvic fascia, not within the pelvis (p. 10).

The special section deals with the diseases of the various parts of the genito-urinary tract. Syphilis as a separate entity is not described, but its lesions are considered in connection with the various parts of the genito-urinary tract in which they occur. This section is very well written. Thus, in gonorrhœa, the various complications are sufficiently mentioned, and the treatment of the disease is carefully considered. The author does not believe in "abortive" treatment, but uses injections from the very beginning. The composition of these injections is given, and also very full directions as to the use of silver salts.

The diseases of the kidneys, bladder, testicle, &c., are considered, and a chapter on functional disturbances of the sexual organs closes the volume.

The subject of operations on the prostate is the joint work of author and editor. They admit the difficulty in determining which of the routes—suprapubic or perineal—is the better; but think that "the weight of evidence seems to be in favour of the former for the majority of cases."

In the author's preface he makes a graceful acknowledgment of his indebtedness to his old teacher, the late Sir Henry Thompson. We congratulate the editor on his readable translation of a work in which the author has attained the happy mean between diffuseness and condensation, and which we have confidence in recommending to our readers as a reliable exposition of the subject.

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*The Life of Pasteur.* By RENÉ VALLERY-RADOT. Translated from the French by Mrs. R. L. DEVONSHIRE. Popular Edition. London: Archibald Constable & Co., Limited. 1906.

It is an excellent move on the part of the publishers to issue a popular edition of this admirable biography, the original of which was reviewed in these pages some years ago in highly favourable terms. The present edition appears in one volume, price 7s. 6d. net, whereas the publishing price of the original two volumes was 32s. For some reason which we could not make out at the time, the name lithographed below the portrait which constituted the frontispiece of the first edition

was "Henri Pasteur." This error has now been rectified, and the inscription reads "Louis Pasteur." Every medical practitioner and student who has not already seen this book should procure a copy and read it.

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*Guide to Anæsthetics, for Student and General Practitioner.*

By THOMAS D. LUKE, M.B., F.R.C.S. Ed. Third Edition.  
Edinburgh and London: Wm. Green & Sons. 1907.

THE fact that a third edition of this little work should have been called for in little more than a year after the appearance of the second is ample testimony to the appreciation of its merits by those for whom it is intended. In Dr. Luke's book we have a reliable and concise guide within moderate compass, and one which will appeal especially to students, in conjunction with practical experience, without which, of course, a true knowledge of anæsthetics is impossible. The book is adequately illustrated and clearly printed on particularly good paper.

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## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

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### SURGERY.

**Regeneration of Bone.** By Henry S. Wieder, M.D. (*Univ. of Penn. Med. Bull.*, September, 1907).—In a very full and elaborate paper, begun in the September number and continued in the October and November issues of the *University of Pennsylvania Medical Bulletin*, Wieder presents the results of a large series of experiments upon the bones of dogs and rabbits, which he has carried out during the last two years with a view to determine the rôle of the different elements of bone in the normal process of repair, as seen in the case of simple fractures, and in the regeneration of bone after partial injury and subperiosteal resection. The paper is copiously illustrated with photographs and photo-micrographs. Further, the work is said to have been carried out with an open mind, without much previous study of the already abundant literature on the subject, and, therefore, it is claimed, the opinions formulated and the conclusions arrived at may be regarded as being as nearly as possible unbiased. In all, 135 experiments were carried out, but for various reasons many of these failed, or were vitiated by accidental causes, so that the reports on which the paper is based comprise experiments on 64 dogs and 17 rabbits. Fifteen separate series of experiments were carried out, directed towards the determination of particular points. These are all concisely stated and explained, the technique being given, and the results in each

series are fully described. After a collective review of the results, and a discussion of their bearing upon and relation to the findings, experimental and clinical, of such authorities as Dupuytren, Macewen, and Nichols, Wieder gives the following summary of his conclusions:—

1. "In the regeneration of bone all the various elements assist."
2. "In their activities they appear to bear more or less reciprocal relations to one another, so that the absence of one can be compensated for by the others."
3. "The activities of the endosteum and the medulla can be brought into play by slight stimulus."
4. "The periosteum, even when proliferated, is incapable of forming osteoid trabeculae unless in close contact and union with previous bone formation or calcareous salts."
5. "Periosteal bone formation is usually preceded by superficial absorption of the cortex through the action of osteoclasts. These possibly liberate lime salts in the tissues, for the osteoblasts to again precipitate in the surrounding hyaline matrix."
6. "Cortical bone-forming activity does not manifest itself until after considerable absorption of the cortex has occurred, so that it may be due to the liberation of bone cells which take on new activity and again precipitate the liberated calcium salts in new situations; or it may be due to the opportunity for the ingrowth of endosteum into the widened spaces."
7. "In unimpaired regeneration of defects of bone the defects are filled with trabeculae and spaces that originally run at right angles to the line of the bone, but re-arrangement occurs in the later stages, with a change in the directions of the canals of the new bone. This is the normal function of cortical activity."
8. "The medulla assists in the formation of osteoid trabeculae by means of a skeleton framework along which the trabeculae form, and also, possibly, by the activities of some of the marrow cells."
9. "The deposit of calcium salts in certain lines to form trabeculae is not due to blood-vessels, as the spaces between the trabeculae, until some time after they have been formed, do not contain blood-vessels."
10. "Cartilage is a pathological but constant feature of the repair of complete fractures. It is not found in normal regeneration free from extrinsic influences."
11. "The formation of cartilage may have some direct or indirect relation to the masses of fibrin found in the region of the line of fracture, or may represent a retarded development of osteoid tissue due to poor nutrition."
12. "In complete fractures the amount of cartilage present depends mostly on the angularity of the fragments, and it is always found in a wedge shape on the internal side of the angle."
13. "Complete fractures are very slow in their final union, so that in the case of vicious union they may be safely re-broken up to nine months, and even longer, without danger of fracturing the bone in another situation. They may even be made to yield to constant traction in the proper direction."
14. "There is usually sufficient callus formed on the internal sides of an angularly deformed fracture to almost re-establish the original line of the bone from one joint to the other, but with commensurate shortening."
15. "In subperiosteal fractures the repair is probably mostly from the endosteum and medulla, because of the extravasation of blood into the medullary canal injuring the medulla to a greater extent than the periosteum."
16. "In repair of greenstick fractures the endosteum and medulla are probably the dominant factors."
17. "Regeneration of the bone after subperiosteal resection is usually cartilaginous in nature when sufficient time has not elapsed before the operation for the formation of periosteal osteoid trabeculae."
18. "A strip of healthy bone, when left between the two fragments of the resected bone, hastens osteoid regeneration."



19. "Healthy medulla, when sutured between the apposed surfaces of the periosteum, hastens considerably the regeneration of bone."

20. "The process of the repair of complete fractures may be divided into the following five stages:—(a) Infiltration; (b) temporary callus formation; (c) re-organisation; (d) permanent callus formation; (e) absorption."

21. "Similar stages are probably found in the human subject also, with slight differences, owing to the size and nature of the species."

22. "The deeper layer of the periosteum, the endosteum, the tissues lining the Haversian canals, and the bone cells, are probably all related or identical tissues, exhibiting different activities because existing under different physical conditions."

23. "Cartilage is converted into osteoid tissue in several different ways, depending upon the age of the cartilage and the stage of the fracture."

24. "Osteoid tissue, when seen in ground section, is not as dense in structure as, and has a deeper yellow tinge than, normal cortex, probably due to some difference in chemical composition."

25. "Specimens of bone, with their soft parts attached, can be ground to microscopic thinness, but they possess no advantage over decalcified specimens beyond demonstrating canaliculi."

26. "Investigations on regeneration of bone, when not accompanied by microscopic study, are untrustworthy and often deceptive."

—ARCHIBALD YOUNG.

**The Technique of the Closure of the Blind End of the Duodenum after Pylorectomy.** By Dr. Ali Krogus (*Zentralbl. f. Chirurgie*, September, 1907).—The difficulty of closing the duodenum satisfactorily and safely after pylorectomy was first pointed out by Brunner, who was followed by Steinthal and Kausch. Brunner made it a rule as often as possible to treat the stump extraperitoneally; Steinthal always covered it with a flap of omentum and left packing in his abdominal wound leading down to it; while Kausch employed first of all a longitudinal suture to close the gut before inverting it by a purse-string suture, by this means being able to bury the part of the bowel uncovered by peritoneum more deeply and surely.

The author of this paper points out that the difficulty arises only in those cases in which the duodenum is divided in its second part (as is usually the case), where it is posteriorly uncovered by peritoneum. He agrees with Kausch in his recognition of the difficulty of getting a satisfactory closure by means of the purse-string suture alone, and proposes the following device—the duodenum is freed for some distance from the surrounding structures, giving a free piece of gut covered in front and at the sides by peritoneum, but devoid of this behind, where also, he states, the muscular coats are much weaker, giving a very weak hold to sutures. By means of a continuous longitudinal suture this posterior part is folded inwards, thus giving a narrow cylinder of strong gut surrounded entirely by peritoneum, which can then easily be closed by the usual purse-string method. This simple device has, in his hands, given satisfactory results in all cases.—ROBERT B. CARSLAW.

**Hepato-Cholangio-Enterostomy in Cases of Absence or Occlusion of the Gall-Ducts.** By Dr. O. Ehrhart (*Zentralbl. f. Chirurgie*, October, 1907).—Previous to this case, of which Dr. Ehrhart publishes a report, only three cases are on record of hepato-cholangio-enterostomy, in which operation an anastomosis is established between a loop of small bowel and the biliary channels in the liver tissue. In these cases the indication for operation was stricture of the gall-ducts, either simple, cicatricial, or carcinomatous, which could not be directly removed or cured by anastomosis between the duodenum and the hepatic duct or gall-bladder. In these cases, however, it has not been shown that there was an absolute closure of the gall-ducts. The author, after these preliminary remarks, goes on to relate the details of his case.

The patient was an infant of 6 weeks, who was handed over to him by a physician for surgical treatment. Since birth there had been severe and permanent jaundice, the stools had been absolutely devoid of bile, the urine contained plentiful bile (the napkins were stained with dark green streaks). The appetite was normal and the temperature subnormal. The only possible diagnosis was occlusion or absence of the gall-ducts. In the event of nothing being done to relieve the condition death would soon take place; but, on the other hand, if the site of the obstruction lay in the common bile-duct the flow of bile could be established by a cholecyst- or hepatico-enterostomy. Thus, although the chances of success were faint, operation was decided on. Through a 6 cm.-long-incision in the middle of the right rectus muscle, just under the border of the ribs, the liver was made accessible. It was found to be dark olive green in colour, slightly cirrhotic, and hard. The gall-bladder could not be found, nor were any gall-ducts visible, although in the hepatoduodenal ligament there were both hepatic artery and portal vein. Thus, the only possible method of establishing the flow of bile from liver to bowel lay in the establishment of a direct anastomosis between the biliary intrahepatic channels and the lumen of the intestine. Accordingly a portion of the liver, 2 cm. long,  $\frac{1}{2}$  cm. broad, and 1 cm. thick, was excised, the bleeding being stopped by compression and three deep sutures. A loop of jejunum was then united by continuous suture to the edge of this wound, and its lumen opened longitudinally, the anastomosis being secured by two rows of sutures. For five days the child remained well, the temperature remaining normal; there was no vomiting, the appetite was good, and the stools were distinctly coloured with bile (the Gmelin test was positive). Diarrhoea began, however, on the sixth day, and the child died on the eighth day, apparently from this persistent diarrhoea. *Post-mortem* examination showed that there was an entire absence of the large gall-ducts (hepatic, cystic, and common); the gall-bladder was represented by a small cyst, about the size of a small pea. There was no peritonitis, the anastomosis being apparently perfect. Thus, in this case, no other operation was possible—cholangiostomy, cholecyst- or hepatico-enterostomy being out of the question because of the complete absence of the large gall-ducts. No difficulty was found in dealing with the bleeding from the liver tissue, the sutures did not cut out of the parenchyma, and there was no leakage from the jejunum (care was taken to have a broad ring of peritoneal adhesion). To guard against kinking of the jejunum several "suspension sutures" were introduced.

As regards the actual success of the procedure the author has no doubt that by means of the anastomosis bile did actually flow from the liver into the jejunum—for no other path was possible, and bile was present in the motions. A permanent cure was cut short by the death of the child from diarrhoea.

He points out that this definite result was not proved in any of the previously reported cases, in none of which an absolute closure of the ducts was demonstrated.—ROBERT B. CARSLAW.

**Treatment before and after Laparotomy.** By Dr. R. v. Hippel (*Zentralbl. f. Chirurgie*, November, 1907).—In the communications of Vogel to this journal on the borderland between medicine and surgery stress is laid on the use of physostigmine in the after-treatment of patients on whom a laparotomy has been performed. Vogel pointed out that this drug excited peristalsis, and he affirmed that the surest method of preventing post-operative adhesions was by establishing early peristalsis. For various self-evident reasons purgatives could not be administered immediately after the operation, but he obtained by the hypodermic injection of this drug the early passage of flatus and stools, and claims to have banished post-operative distension and meteorism. Dr. Hippel having followed out this line of post-operative treatment in a long series of cases (60 laparotomies) strongly recommends it. His procedure differs slightly from that of Vogel, and is as follows:—Immediately after the operation 1 mg. (0.0154 gr.) of physostigmine is injected subcutaneously, followed by a similar injection every three hours

until peristalsis sets in, of which the patient becomes aware by experiencing colicky pains in the abdomen. At this stage a soft rubber rectal tube is introduced, and within an hour flatus is passed. He affirms that two, three, or four injections are invariably sufficient, and in some rare instances one has sufficed. On the day after the operation a glycerine enema is given, which results in the painless evacuation of a motion. For this procedure he claims several advantages—(1) adhesions cannot form if peristalsis is excited early; (2) post-operative distension with its pain and discomfort is absent; (3) ventral hernia does not occur; (4) there is no chance of the very dangerous upward pressure of the diaphragm on heart and lungs; and (5) following on the early evacuation food can be freely administered, and thus the patient's general condition can be greatly helped and convalescence hurried.

The author, however, goes farther than Vogel, and argues that having at our disposal this reliable method of getting an early evacuation, it is unnecessary and harmful to administer purgatives before operation—the effect of these purgatives being to favour an atonic condition of the bowel.—  
ROBERT B. CARSLAW.

### The Treatment of the Fall of Blood-pressure in Peritonitis by Intravenous Injection of Adrenalin and Normal Salt Solution.

By Dr. Hans Hoddick (*Zentralbl. f. Chirurgie*, October, 1907).—Dr. Hoddick states at the outset that his paper is merely a short summary of the results which he and Professor Heidenhain have obtained in the course of a two years' study of the effect of the adrenalin treatment of shock in peritonitic cases. These results, he thinks, are so striking that they ought at once to be made public without waiting till the details of all the cases are collected. The cases which have undergone this treatment have been those in which there was severe generalised purulent peritonitis following, in most instances, on appendicitis.

He reviews briefly the work of Romberg and Pässler, who proved experimentally that the very marked fall in the blood-pressure which is seen in acute infectious diseases—and is characterized by a very soft, weak, and "empty" pulse—was due not to a primary cardiac failure, but to a paralysis of the circulatory centre in the medulla oblongata. He affirms that the same holds good for the fall of the blood-pressure in the state of shock so often seen in severe cases of peritonitis, in which the cardiac muscle and ganglia may be very little affected.

He then goes on to refer to the usual method of combating this by subcutaneous or intravenous injections of large quantities of normal salt solution, for which Wiesinger, in Hamburg, claims attention, and with which he has had apparently very good results. Hoddick, however, challenges this by saying that this mechanical filling of the blood-vessels can have no possible effect in combating a central paralysis, and then goes on to describe in detail the type of cases which he has treated and his method of treatment.

Less severe cases—*e.g.*, sero-purulent peritonitis—he treats with subcutaneous injection of camphor, caffeine, and normal salt solution, whereas the severe cases of shock seen in purulent peritonitis, are all treated with adrenalin. He gives the following statistics in cases of general peritonitis following appendicular abscess before and after employing the adrenalin treatment—

	Recoveries.	Deaths.	
1901, . . . . .	3	3	} Before.
1902, . . . . .	—	5	
1903, . . . . .	1	4	
1904, . . . . .	2	2	
1905, . . . . .	9	1	} After.
1906, . . . . .	4	2	

The intravenous injection consists of  $1\frac{1}{2}$  to 2 pints of normal salt solution with 6 to 8 minims of 1 in 1,000 solution of adrenalin. If this is given half an hour

before operation he finds that the wound, instead of being practically bloodless (the colour of the blood being very dark), is more normal (there being plenty of bright red blood flowing at normal pressure from the cut vessels).

As a rule, the injection is not given till after the operation is over, but in desperate cases it ought to be given half an hour before operation, and one ought to wait for the reaction induced. One can feel in the radial pulse shortly after the injection a marked improvement in the blood-pressure; the vessel is better filled, and the pulsations are stronger, and usually less frequent. The pale, cyanotic colour of the skin is lost, and the sunken eyes and features are made more normal.

The injection is made into the median cephalic vein, which can be easily isolated, and the procedure ought to take from 20 to 30 minutes. One injection may be sufficient—the effect being still noticed twelve hours later in the pulse; but if the blood-pressure falls again the injection must be repeated after a few hours.—ROBERT B. CARSLAW.

## GYNÆCOLOGY AND OBSTETRICS.

**The Blood-Platelets during Menstruation, Pregnancy, the Puerperium, and the First Days of Life in the Newborn.** By S. Rebaudi (*Archiv. Ital. di Giner.*, Anno x, vol. 2, No. 1).—The whole of this number of the *Archivio* is devoted to this monograph of 50 pages. Dr. Rebaudi, working at Genoa, has made a series of observations on the numbers of the platelets under the conditions mentioned in the title. He gives full details of the technique for finding, staining, and counting these elusive bodies. He made use of wet methods and of dry smears stained, counting the platelets relatively to the erythrocytes on a stained smear, and afterwards counting these in a Thoma-Zeiss instrument. The wet method was used for estimating the agglutination. He prefers toluidine blue for staining. Ordinary methods of collecting and diluting the blood are useless, as the platelets adhere to the apparatus. The drop of the diluant and stain is placed on the slide, and the droplet of blood added to this direct from the finger, and stirred at once to prevent premature coagulation.

The author gives a chart showing the mean of his observations, of which the following figures may be quoted. Numbers in thousands at end of months of pregnancy:—

1	2	3	4	5	6	7	8	9	During Labour.	After Labour.
250 to 500	600	800	750	700	750	900	1,500	950	1,600	350

This shows the great rise during labour, and the very sudden drop in the number of blood-platelets in the count made quarter of an hour after labour.

Similarly there is a marked rise during normal menstruation, beginning a few days before the flow, and gradually returning to normal after the period is over.

The author gives the results of his observations in several tables, and from these he tentatively draws the following conclusions:—

The normal number of platelets in adult blood varies considerably about the number 300,000 per c.mm., while in the infant at the tenth day it varies about the figure 95,000.

The platelets are a physiological regressive stage of the erythrocytes; he thinks he has confirmed Vassale's hypothesis, for he found that the number of the platelets varies inversely as the number of the red corpuscles.

The number of the platelets in the agglutination masses varies inversely as their size. This massing of platelets in large groups varies directly as the coagulative power of the blood.

During pregnancy the agglutination of the platelets diminishes during the so-called physiological crises corresponding with the missed menstrual periods, as also during normal menstruation in the non-pregnant, at which times the coagulability of the blood is diminished.

This ratio holds good also of the blood of the newborn. The platelets, accordingly, are the morphological index of the coagulability of the blood.

If Carbone is right in his demonstration that the greater or less coagulability of the blood is an index of the greater or less resistance of the organism to infective diseases, then the coagulability of the platelets is, to some extent at least, an index of the resisting power of the body to poisons of various sorts, exogenous or endogenous.—E. H. L. OLIPHANT.

**The Leucocytes in Premature Fœtuses** (*Archiv. Ital. di Ginec.*, Anno x, vol. 2 No. 4).—Viana read a paper on this subject before the thirteenth meeting of the Italian Obstetrical Society. He studied the blood in fetuses from their sixth to ninth month of intrauterine life, and the bone marrow from the fourth month onwards. The hæmatocytes were nearly normal in number, but the leucocytes somewhat increased. Nucleated red corpuscles are more frequent in the early fetuses than in the later ones. The leucocytes in the premature are chiefly small and medium mononuclears; at term the polymorphonuclears are as in the adult. Large mononuclears, also, are more frequent in the premature than at term or in the adult. Neutrophils and oxyphils are much the same in prematures as in adults. In syphilis leucocytosis is more marked than in other prematures; in them many megaloblasts are found, especially in the bone marrow.—E. H. L. OLIPHANT.

**The "Mobile Oxygen" in the Blood during Pregnancy.** By Delle Chiaie (*Archiv. Ital. di Ginec.*, Anno x, vol. 2, No. 4).—The author, discrediting the conclusions published in 1888 by Doleris and Quinquand, that the oxygen-carrying power of the blood is diminished, made fresh researches. He is of opinion that the authors quoted went wrong from calculations based on the total oxygen in the blood. It is only the "mobile oxygen" which is available for the tissues, that is, the oxygen which can be removed by a reducing substance such as hydrosulphate of sodium. He maintains that the mobile oxygen—and, therefore, the respiratory capacity—increases during pregnancy. This passes off in twenty-four hours after delivery, and returns to the normal. The increase of respiratory capacity in pregnancy is to provide for the blood supply of the fœtus. His observations were made on bitches and rabbits.—E. H. L. OLIPHANT.

**Medical and Surgical Treatment in Gynæcology.** By Strassmann (*Volkmann's Sammlung*, Nr. 451, 1907). This number is devoted to a lecture by Strassmann, of Berlin, on the limits of medical and surgical treatment respectively in gynæcology, and gives many useful hints to the practitioner. Both forms of treatment are liable to abuse unless they are made supplementary to each other. In discussing the treatment of endometritis by douching, Dr. Strassmann makes some remarks worth remembering. The effects vary according to the temperature of the water used—cold, tepid, about 30° C., i.e., 86° F.; warm, to 40° C., i.e., 104° F.; and hot, up to 50° C., i.e., 122° F. Warm douches increase congestion and relax the tissues, hot ones excite contractions of the vessel walls; so that warm douches increase the menstrual flow, while hot ones check it. Accordingly, warm douches are indicated in the amenorrhœa of lactation atrophy (super-involution), and in chlorosis with its leucorrhœa, and hot ones to reduce inflammatory exudations. Tepid douches can be used for simple cleansing. Cold douches act like hot ones, but the effect is more temporary. In such cases as phthisis, where pregnancy is undesirable, Strassmann recommends a douche, *post coitum*, of alum, boric acid, and zinc sulphate, of each a teaspoonful to the pint of water, but it is not infallible.

Hot douches cannot be used indiscriminately, for the external skin does not

stand so high a temperature, and must be protected by some suitable instrument against the outflow from the vagina. In inoperable carcinoma cold douches are recommended, along with creolin, in spite of its odour. As treatment for endometritis curetting so frequently fails that it must be followed by intrauterine irrigation for a considerable time, and should not be undertaken till intruterine medication has been tried continuously for some weeks without success.

In the hæmorrhage of the præclimacterium Strassmann recommends the intrauterine use of iron chloride; atmokausis is uncertain here, and of limited application in general. He gives a much-needed warning against the diagnosis of hysteria. Hysterical symptoms so-called usually have some physical basis; among its causes he reckons what Freud calls psycho-sexual insults. As a nerve tonic he recommends the cold frictions—rubbing through a cold wet sheet while the patient stands or sits in a hot bath.

In discussing the indications for operation he maintains that inflammatory affections of the appendages should not be operated on during their first year, unless by simple evacuation. In suitable cases he recommends opening of the vaginal vault for diagnostic exploration. He draws attention to the heart symptoms in uterine myoma as affecting the prognosis. The whole of this lecture is worth reading as a sane criticism of gynæcological treatment.

— E. H. L. OLIPHANT.

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## NERVOUS DISEASES AND INSANITY.

**Tumour in the White Matter of the Motor (Arm) Area: Differential Diagnosis between Cortical and Subcortical Lesions.** By C. T. von Valkenberg (*Neur. Central.*, 1st July, 1906).—The patient was a woman, aged 30. Her illness began in July, 1903, with tremor and spasm of the right hand. The spasms later on affected also the right arm and leg and—rarely—the right side of the face, and became associated still later with loss of consciousness. Slight general convulsions occurred at irregular intervals, followed by slight rigidity of the right arm. In October, 1904, weakness of the right arm appeared, and gradually increased. Fits occurred as before until February, 1905, when fits with loss of consciousness ceased, and the spasms became tonic, affecting usually only a part of the right arm—chiefly the shoulder muscles, less often the fingers. In October, 1905, the right arm had become very weak, and the muscles somewhat wasted. Signs of intracranial tumour existed, including tenderness on percussion of the head, especially on the left side. A subcortical lesion in the left ascending frontal gyrus (arm area) was diagnosed. In December, 1905, the head was trephined. There was no lesion of the cortex of the arm area, and an incision in the middle two-fourths of the left ascending frontal gyrus revealed nothing. But on separating the lips of the fissure of Rolando, the finger of the operator detected undue resistance in the depth of the sulcus, and a tumour (spindle-celled sarcoma) was found in the white matter of the fore- and under part of the arm area.

Lesions affecting the cortex, and those involving the white matter of the motor area, give rise to very similar signs of irritation, and not infrequently a lesion has been found in the white matter at autopsy or operation when a cortical lesion was diagnosed. In cortical lesions of the ascending frontal gyrus, the fits are of the true Jacksonian type, always beginning in the same paretic group of muscles and spreading in a characteristic way. In the case here described, the fits always began in the same limb, but their course was irregular—at one time beginning in the fingers, at others in the shoulder, upper arm, fore-arm, or in two regions simultaneously. This indicated irritation of the whole arm area, and the departure from the Jacksonian type of fit made the presence of a cortical lesion unlikely, and suggested that of

a lesion in the white matter irritating the cortex in a diffuse way, ultimately compressing it, and so causing partial loss of function. This modification of the Jacksonian fits occurring in a paretic limb led to an accurate localisation of the tumour.—M. B. H.

**The Psychic Phenomena in Hemicrania and the Relations of this Affection to Epilepsy.** By Dr. Vasco Forli (*Rivist. Sperim. di Freniat.*, vol. xxxiii, fasc. 1).—The mental phenomena associated with hemicrania have received a very varying amount of recognition, and have been ascribed a very variable amount of importance, by different observers. Moebius, *e.g.*, hardly mentions them, whilst Mingazzini elevates them into a special group—the hemicranial dysphrenias. Certain authors, again, refuse to admit hemicrania as a morbid entity, and regard it as analogous and even identical with epilepsy. In the paper before us the writer gives his views on these questions in a very clear and convincing manner, basing his opinions on the minute analysis of a large number of cases that have come under his personal observation. He shows that mental disturbances are very commonly associated with hemicrania. They vary greatly in severity, but in most instances are comparatively slight. They may present themselves one or two days before the attack, immediately precede it as an aura, or appear only when the pain has ceased. Most frequently, however, they arise at the acme of the attack, and then gradually diminish. Forli shows clearly that the mental symptoms are not, as held by some, directly dependent on the pain. Though it is true that the mental disturbance shows itself more frequently and with greater intensity at the height of the pain, this happens because at this moment we have the fullest action of the sole underlying cause, which gives simultaneous origin to the two orders of phenomena.

All fields of psychic activity are liable to be disturbed, but psycho-sensory disorders are by far the most important, especially in the fields of sight and hearing (from the most elementary up to the most complex hallucinations). A special feature of these hallucinations is that they do not exert any appreciable influence on the conduct of the patient.

Psycho-sensory phenomena were observed by Forli in cases in which the history and objective examination led to the absolute exclusion of hysteria, epilepsy, &c., and left no doubt as to their distinct relation with hemicrania.

The anthropological and neurological characters associated with epilepsy (impulsivity, irritability, apathy) and with hysteria (suggestibility, &c.) are absent in hemicrania. The sufferers from hemicrania never show the mental decadence or the perversion of character which we find in epilepsy. We can agree that these two maladies develop on a predisposed neuropathic soil, but they differ essentially from each other and have each a special genesis and mode of evolution.

Cases no doubt arise in which the diagnosis is difficult. This happens here, as in other diseases, when we find ourselves confronted by syndromes symptomatologically alike but differing in genesis and evolution. We have then to deal with symptomatic hemicranias, which enter chiefly into the group of the sensory epilepsies. Much more rarely, forms of symptomatic hemicrania are met with in tabes, general progressive paralysis, and focal disorders of the brain. In the vast majority of cases, however, hemicrania constitutes a disease *per se*.—JAMES H. MACDONALD.

**On the Urinary Interchange in Hemicrania.** By M. A. Bioglio (*Rivist. Sperim. di Freniat.*, vol. xxxiii, fasc. 1).—Bioglio has made a minute daily analysis of the urine in four cases of hemicrania, and found that there are fairly constant alterations in the elimination of the principal organic and inorganic elements of the urine during the interval between the attacks of hemicrania. The nitrogenous metabolism is slightly retarded, the amount of chlorides, total sulphuric acid, and earthy phosphates is below normal, whilst the total phosphoric acid eliminated is normal. During the attack the

nitrogenous interchange is constantly quickened, whilst all the other elements of the urine show a slight oscillation or remain unaltered.

Bioglio compares the results of his analysis with those obtained by Guidi in the case of epileptics, both researches having been carried out under identical experimental conditions. The comparison reveals two main points of difference. In the epileptic there is, according to Guidi, an inverse relation between the attacks and the elimination of urea and ammoniacal compounds, whilst there is an increased elimination of phosphoric and sulphuric acids. It is apparent that there is a noteworthy difference in metabolism in the two affections, and this might lend support to those who, like Forli, maintain that hemiplegia differs essentially in genesis and mode of evolution from epilepsy.

—JAMES H. MACDONALD.

**Two Cases of Korsakow's Syndrome without Polyneuritis.**  
By N. A. Pashayan, M.D. (*Albany Medical Annals*, November, 1907).—In 1887 and the few succeeding years, Korsakow described a group of mental symptoms as characteristic of a special psychosis accompanying multiple neuritis of alcoholic or other toxic origin. He emphasised the point that polyneuritis was an essential component of this psychosis, although he recognised that the symptoms might have been ill-defined, and thus overlooked in some cases. The features which determine the Korsakow syndrome are the following:—(1) Inability to fix the attention and consequent poor grasp of new impressions; (2) mental confusion and disorientation for time and place, especially for time; (3) loss of memory for events transpiring in the recent past; (4) tendency to fill up the gap with pseudo-reminiscences and confabulations.

Many observers have corroborated in the main the claims of Korsakow. On the other hand, some contend that Korsakow's syndrome is not seen exclusively in polyneuritis, but obtains in other conditions where neuritis plays no part, and the following associated conditions have been recorded:—Hæmatemesia, apoplexy, cerebral tumour, syphilis, puerperium, concussion of the brain, polyencephalitis superiora hemorrhagica, cerebral lues, epilepsy, senile and arterio-sclerotic psychoses, and general paralysis.

In the two cases recorded by the author (notes of which are here appended) while the mental symptom-complex in each was typically characteristic of Korsakow's disease, no evidence of active or quiescent polyneuritis was discovered, although looked for with considerable care. These cases, therefore, tend to support the view of recent observers, that Korsakow's syndrome is a mere syndrome, and not distinctive of a special psychosis.

**CASE I.**—No history was obtainable. The patient was ill-nourished and suffered from pulmonary tuberculosis. There were no subjective complaints. Tendon reflexes were exaggerated, but Babinski sign was not present. There was slight unsteadiness in the Romberg position, but other co-ordinate movements were well performed. There was no weakness of any extensor muscles. The tongue and fingers were tremulous. There was no tenderness of muscles or nerves. The speech was sticky, the words being pronounced with hesitancy and effort. Examination of the cerebro-spinal fluid revealed lymphocytosis and high tension. The pupils were unequal, and both reacted promptly. There was no ocular paresis. The physical signs were indicative of general paresis. The mental condition was typical of the Korsakow syndrome. The patient was affable, but had no delusions or hallucinations. He was unable to retain a name or number for one minute. He could, however, remember the dates of his birth and marriage. His memory for the recent past was a blank, and he filled up the blank with a variety of tales.

**CASE II.**—Male, æt. 50. Had been a steady drinker, and seven years before had delirium tremens. The illness began two years before, when his wife found him comatose, after which he had several fits of "graud mal" type. Six months ago he became restless, destroyed his clothes, and went into the street naked. He had tremors of tongue, lips, and fingers. There were ptosis of the right eyelid, Romberg's sign, exaggerated tendon reflexes, but there was no Babinski sign, nor weakness of extensors, or tenderness of



muscles or nerves. The pupils were equal, and responded sluggishly. The speech was slurring. Mentally he was dull and confused; he had failed to remember events in the recent past, and frequently contradicted himself. He remembered events in his early life. He had no false sense of impressions or delusions. Further progress showed him to be suffering from dementia paralytica, while the mental conditions showed all the essentials of the Korsokow syndrome.—GEO. A. ALLAN.

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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 18TH JANUARY, 1908.**

	WEEK ENDING			
	1907. Dec. 28.	1908. Jan. 4.	Jan. 11.	Jan. 18.
Mean temperature, . . .	39·2°	31·1°	33·7°	42·8°
Mean range of temperature between day and night, .	15·0°	28·0°	37·0°	23·5°
Number of days on which rain fell, . . . . .	1	0	3	4
Amount of rainfall, . ins.	0·12	0·00	0·99	1·48
Deaths registered, . . .	317	339	477	482
Death-rates, . . . . .	19·5	20·6	29·0	29·3
Zymotic death-rates, . .	3·0	4·1	5·6	5·8
Pulmonary death-rates, .	6·1	5·0	9·3	9·3
DEATHS—				
Under 1 year, . . . . .	62	76	88	87
60 years and upwards, .	71	69	109	110
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	38	47	74	73
Scarlet fever, . . . . .	3	5	3	3
Diphtheria, . . . . .	4	5	2	1
Whooping-cough, . . .	6	10	10	17
{ Fever, . . . . .	1	1	2	2
{ Cerebro-spinal fever, .	3	4	2	8
Diarrhoea, . . . . .	5	6	7	8
Croup and laryngitis, .	...	...	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	75	60	130	120
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	4	3	9	6
Diphtheria and membranous croup, . . . . .	17	17	24	21
Erysipelas, . . . . .	16	19	15	26
Scarlet fever, . . . . .	42	34	44	48
Typhus fever, . . . . .	...	...	...	...
Enteric fever, . . . . .	5	8	43	59
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	1	1	1	1
Measles,* . . . . .	859	440	1081	1103

\* Measles not notifiable.

THE  
GLASGOW MEDICAL JOURNAL.

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No. III. MARCH, 1908.

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ORIGINAL ARTICLES.

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CONSUMPTIVE SANATORIA: ARE THEY WORTH  
WHILE? <sup>1</sup>

By DAVID LAWSON, M.A., M.D., F.R.S.E.

It is a startling fact that over five millions of our fellow-creatures in the world, and of these over one million in Europe alone, die every year from pulmonary consumption. Richel, comparing those great forces which are destructive of human life, has shown that the popular conception of war leading the van in this respect is an altogether fallacious one. Compared with the ravages caused by consumption the destructive work done by the sword is relatively unimportant. For, taking the great wars of the nineteenth century as an example, he finds, that while by men's engines of destruction fourteen million combatants were slain, the death-roll from pulmonary consumption during the same time and in the same countries amounted to no less than thirty million persons. You are familiar with the deplorable prevalence of this disease in our own country—a disease which every year cuts off whilst still in possession of their full working power more than one-half

<sup>1</sup> Read at a meeting of the Glasgow Eastern Medical Society held on 5th February, 1908.

the number of those wage-earners who die from all causes put together. And it is not alone the mere number of lives which it accounts for which renders this disease of pre-eminent importance to us, although even upon that account far out-distancing as it does all other diseases in the havoc which it works on human life—it easily holds premier position—but exerting a selective affinity it proceeds with conspicuous malevolence to choose as its victims those whom the nation can least easily spare. It is at that age when sentiments ring true, in the early years of maturity, in the full bloom of manhood and womanhood, when the care of the next generation by the parents who have begotten it is most needed, that consumption enters the home and strikes its fatal blow. Nor does the disease confine its attacks to the ranks of the ignorant, the poor, and the illiterate. On the contrary, it would almost appear that the possession of exceptional attainments only serve to attract its malignant attention the more. From the ornaments of our own profession, and from the ranks of literature, music, and art, we know that consumption has exacted a heavy toll. But for consumption, Robert Louis Stevenson might still be delighting us with his entrancing stories of South Sea mysteries; John Keats might have given us another "Endymion;" Artemus Ward might even now be engaging our fancy with fresh flights of inimitable humour; Schiller might have given us another "Song of the Bells;" and Chopin might have dreamed another "First Polonaise." Laennec, Spinoza, Purcell, and Rachell all died of consumption. And these are but a moiety out of the world's nobility, whose precious lives have been cut off in their prime by the great white plague.

In the light of these facts the subject which we have met to consider is one which concerns directly or indirectly every loyal citizen in this land, and as members of a profession whose high ideals embrace not merely the cure, but the eradication and prevention of disease, it holds for us a very special interest.

Within the last ten years, during which the sanatorial movement has been advancing in this country, many conflicting opinions have been expressed from time to time alike in medical and in lay journals regarding the practical utility of sanatoria in fighting this great scourge. The time now appears to be ripe for an open discussion of the subject. It is, therefore, with the greatest possible pleasure, and with a deep sense of the high honour you have conferred on me, that in response to your kind invitation I appear before you this evening to ask your courteous consideration of a statement of

some of the evidence upon which the value of the sanatorial claim rests. Not alone in the realm of pure medicine is to be found all, or even the majority, of facts which go to constitute the apology for the consumptive sanatorium. If, therefore, in addition to the proofs afforded by purely clinical evidence one ventures to cull from historical, sociological, commercial, and industrial literature, evidence on behalf of their value, I trust you will bear with me. For it appears to me that only as we approach the subject on such broad lines as these can we expect to obtain in proper proportion a true conception of the subject-matter in hand.

Thus far we have been concerned in bringing to your recollection the deplorable prevalence of tuberculous disease throughout the world, and in endeavouring to show the reasonableness of its claim in the common interest of humanity on our serious attention. In view of the facts which have been cited, and they are but as a drop in the vast ocean of facts which are available, it is unthinkable that any rational man can be disposed to question the correctness of the thesis that "the disease is one which ought to be energetically dealt with on systematic and comprehensive lines." If that is granted, then the importance of that part of the subject with which we are concerned this evening, "Are consumptive sanatoria worth while?" "Do they justify their inclusion as weapons in the armamentarium at our disposal for fighting this disease?" will be readily recognised.

It has been seriously urged in some quarters that a careful consideration of the record of work done by consumptive sanatoria in this country up to this point indicates that a negative answer should be given to this question, and that it has been shown that "sanatoria are not worth while." Whilst one cannot admit that this conclusion is warranted by the evidence from which it is drawn, one takes exception to a course of action which restricts the field of observation to so narrow limits, and does not hesitate to form so sweeping a conclusion upon so limited a generalisation as this provides. Rather does one prefer, passing beyond the narrow confines of these insular surroundings, to draw one's evidence from the operation of those great forces which are at work in the larger world beyond, and to avail oneself of the lessons of experience gained in other countries and in other lands. Let me remind you of some of the more familiar arguments by which their detractors have sought to show that sanatoria are unworthy of support. And in doing so, first let us direct your attention to what may be conveniently called

## THE HISTORICAL OBJECTION.

It has been urged that sanatoria constitute the latest fad of a faddy profession, that they are new and untried, and that being new their value remains to be demonstrated. That this is far from being the case, even a superficial acquaintance with the history of the movement will reveal. The argument is one which is singularly out of place in this of all lands. For is it not to a Scottish physician writing from the Highlands of Scotland to his friends in London in the year 1747, that we are indebted for first advocating the treatment of consumption upon those broad principles of a well-regulated life spent under open-air conditions in association with a rich and generous diet, which is the outstanding feature of sanatorium *régime*. Nearly three-fourths of a century has elapsed since George Bodington, a country physician in Warwickshire in 1840, founded the first consumptive sanatorium in this country. But such was the opposition with which he met in the profession and outside of it, his principles ridiculed and laughed at, his practice held up to scorn, and his patients driven from his "home," that after a few years' trial he was compelled to abandon his work. And by the strange irony of fate, this, the first consumptive sanatorium, founded not only in this country, but in the whole world, was converted into an asylum for the insane. But of the good seed which he had sown not all of it fell upon stony ground. Some fell into the receptive soil of the mind of a German physician—Dr. Hermann Brehmer—where it took root and afterwards sprang up, bringing forth good fruit. The fruit was shown in the founding of the Goebersdorff Sanatorium by Brehmer and the publication later on of eight years' work in which he demonstrated the good results he had obtained. This gave the start to the whole modern sanatorium movement, which has grown to such dimensions in every part of the world. It is a point of passing interest that this the first sanatorium in Germany was founded in 1859, *i.e.*, nineteen years later than the Warwickshire institution. So that the credit popularly assigned to Germany of priority in the erection of sanatoria is one which is based upon altogether inadequate knowledge, and is unwarranted by fact. It is thus, then, clear that sanatoria are not new nor are they now on their trial. It is long since they came into existence, and it is long since they passed through, and successfully emerged from, the stage of trial.

It has by others been objected that the results obtained do not justify the claims of sanatoria.

### THE CLINICAL OBJECTION.

In this connection I ask your attention to the evidence to be derived from the medical side. The clinical function fulfilled by sanatoria may be classed under two heads—firstly, the part they play in limiting the spread of consumption; and, secondly, the place they occupy in the cure of the disease.

With regard to the first head—the prevention of the spread of consumption—it is observed that sanatoria take their place alongside general infectious fever hospitals, the incalculable value of whose work in many cases in curing, and in every case of infectious disease with which they deal in effectively isolating, is abundantly recognised on all hands.

But consumptive sanatoria in regard to consumption exert a much more far-reaching influence in relationship to that disease than is effected by any fever hospital in relationship to the zymotic diseases with which it deals. For, not only does a sanatorium, so long as a patient from an infected home remains in it, remove from the other members of that home the danger of being infected with the disease by the patient, but in addition it instructs him—in this case usually a person of years and discretion, and in this respect differing from the subjects of zymotic disease who are usually of tender years—in the principles of not only how to get well but how to remain well. Such a man becomes an apostle of hygiene in the home and surroundings to which he returns. As a distinguished German physician has expressed it, “It is on the patient’s mode of living after his return home that the influence of the sanatorium treatment is most markedly and most beneficially exercised. Such patients greatly improve the hygienic condition of their homes as the result of their experience of sanatorium life.” The cumulative influence for good throughout the country, exerted in this way by consumptive sanatoria, is undoubtedly very great indeed.

But it is on the second head, namely, their capacity for procuring the cure of consumption in a reasonably large number of cases, that the efficiency of sanatoria is most vigorously assailed. And in endeavouring to deal with this objection let me remind you that it has been clearly established that the larger the proportion of persons who enter sanatoria when the disease is present in the early stage



the larger will be the proportion who will be restored to health again.

Public bodies who make no attempt to send only good clinical types of cases to their rate-supported sanatoria ought not to expect a large proportion of cures. Hence the deductions which the auditors of such corporations, who do not exercise this selection, make and report to them as to the cost implied in the cure of a single case of phthisis by sanatorium treatment, are quite fallacious and misleading. By way of illustration, let me remind you of the case of Heswall Sanatorium near Liverpool. Early in 1903 a sanatorium was opened there by the Poor Law Guardians. Ten beds were reserved by the Corporation of Liverpool and maintained by them. In February, 1905, Mr. Harrigan, one of the managing committee, stated that, whilst he had supported the scheme to begin with, he now regarded the attempt to cure the consumptive poor in a sanatorium as a dismal failure. It was shown that of 38 patients who had passed through this institution during the past two years 3 only had had the disease arrested, 8 could not be traced, and the balance had done badly. The outlay on each patient was £2, 8s. 3½d. per week, and it was thus apparent that it had cost over £1,000 to cure a case of consumption by sanatorium means. For his part he did not think it was worth while. Such is the false position in which public bodies find themselves who, without attempting to select the clinical type of case which they send to their institutions, nevertheless expect to effect a large percentage of recoveries, and that at a relatively small cost per head.

There is a term frequently used in connection with the disease, the meaning of which applied to consumption is not always clear. Needless to say I refer to the word "cure."

The expression is so elastic that its employment is open to grave objection, unless one defines what one means by it. As it is my intention to quote some statistics drawn from German sources dealing with the proportion of so-called cures attained, it will make for clearness of conception in our minds as to the real significance of these figures if I state to you the sense in which the word cure is there used. It is used in an economic sense, and hence the cure is sometimes referred to as an "economic cure." When so used it implies on the part of the patient such a restoration towards sound health that he possesses not less than one-third of his normal wage-earning capacity. Between the years 1899 and 1903 there were treated in the workmen's sanatoria of Germany

approximately 70,000 persons suffering from consumption. May I direct your attention to this table (4), which shows the proportion of persons undergoing sanatorium treatment who were cured in each of these five years. Here you observe that whilst in no year the figure fell below 72 per cent, it reached during the last year as high a point as 80 per cent. And I would further draw your attention to the fact that the percentage of recoveries, although at first high, tended as time went on to rise still further rather than fall. The obvious explanation of this feature lies in the fact, that as the importance of early treatment became generally recognised, and the probability of working power being restored by its means, patients more readily consented to place themselves in sanatoria at the very commencement of their trouble than they formerly did.

The following table shows the percentage of economic cures obtained in patients treated in the Insurance Sanatoria of Germany:—

Year.	Percentage.	Year.	Percentage.
1899, . . .	74	1902, . . .	78
1900, . . .	72	1903, . . .	80
1901, . . .	77		

If we are to appreciate the full significance of these facts it is not sufficient that we accept as conclusive evidence a percentage, no matter how high a percentage it may be, of cures registered. On the contrary, it is important that we obtain some idea of the durability of these cures and the permanency of the results. It will enable us in a measure to do so if we follow the after-history of those patients, and accompany them from the hygienic surroundings of the sanatorium from which their recovery has taken place to the less eugenic conditions of life in the workshop to which they have returned. Having done so, let us ascertain what proportion of those men were still working in the ordinary way from one to two years afterwards. This table is designed to furnish that information.

Patient left the Sanatorium in	Percentage of such enjoying full working capacity.	
	(1)	(2)
1899, . . . .	92	67
1900, . . . .	92	69
1901, . . . .	93	92
1902, . . . .	94	92
1903, . . . .	94	—

That in no case after an interval of one year was a smaller number than 92 per cent able to follow their full employment is a very remarkable fact. But that at the end of two years the percentage of those able to work had risen from 67 to 92 per cent is still more significant, for it suggests that not only were the recoveries recorded no mere transient and ephemeral manifestations of improved health, but that there was a solidity and permanency about the improvement in the vast majority of cases which justly entitled them to be ranked as cured. But, it may be that there are those who do not consider two years a sufficiently long time to judge of recovery. For the consideration of such I venture to submit Riches' table in which is shown the after-histories of the cases cured from one to as many as nine years previously.

Year.	Total Number of Persons Treated.	Years after Discharge.	Percentage enjoying working capacity in 1904 for	
			Full Work.	Light Work.
1895, . . .	56	9	45·5	7·3
1896, . . .	146	8	61·2	12·2
1897, . . .	218	7	59·2	13·4
1898, . . .	251	6	53·7	14·5
1899, . . .	306	5	55·7	14·9
1900, . . .	296	4	61·0	20·9
1901, . . .	215	3	51·6	20·0
1902, . . .	175	2	65·5	17·5

(These figures, it is to be noted, indicate not merely the percentage of those cured but of all patients treated whose working capacity was preserved.)

That fact, that eight years after discharge from sanatoria so large a number as 73 per cent of persons treated were still capable of work, and of these over 61 per cent enjoyed full working capacity, must effectually refute the contention of those who assert that the clinical results of sanatoria do not justify their existence.

Evidence of this nature might be indefinitely multiplied. But considerations of time oblige me leaving this attractive portion of our subject, to invite your attention to some considerations of a different nature under the head of administrative, and to the third class of objection, namely,

## THE COMMERCIAL OBJECTION.

Stated briefly, it is urged "treatment in sanatoria does not pay."

I trust you will bear with me if I ask you to go back with me to the year 1881, and to transfer your thoughts for the moment to the august gathering present at the opening of the German Reichstag in that year by the late Emperor William I. In His Majesty's message to the Reichstag on that occasion, there appears the following passage:—

"We consider it our Imperial duty to impress upon the Reichstag the necessity for furthering the welfare of the working people. In order to realise those views, a Bill for the insurance of workmen against industrial accidents will first of all be laid before you, and afterwards a supplementary measure will be submitted providing for a general organisation of industrial sick relief insurance."

No longer need any German worker stricken with illness be beholden to charity, for under a system of insurance which has been evolved out of this Imperial mandate, every working man in Germany incapacitated by sickness has a legal right to a measure of provision, both for himself and his family. This system had not been many years in operation before the enormous extent of the claims which sufferers from consumption were making upon the funds of the various insurance companies arrested the attention of the auditors. On investigation it was found that, of the total disbursements made on account of sickness to persons of 30 years of age engaged in the more common industries, more than a half were due to consumption.

There was obviously here an urgent call for some action if the enormous drain made upon their financial resources by the sufferers from this disease were to be reduced. It was thus that it came about that the treatment and prevention of tuberculosis became the object of special care on the part of those companies. Their immediate object is, of course, to save the money entrusted to them and to prevent its being drawn upon to too great an extent by the various forms of sick pay. Obviously the way to do this is to restore to as many of their invalided members as possible their lost or diminished working power, and to prevent others becoming invalided. Accordingly, after having fully considered the whole subject, the Imperial Insurance Department issued an instruction to

the various other workmen's insurance companies, from which the following is an excerpt:—"You are advised to avail yourself of the favourable opportunity offered by the exertion of the Unions, and, in cases of consumption where the insured is capable of recovery, to demand the aid of sick clubs and committees concerned for the preservation of the workmen's self-support, by granting a treatment to that purpose in sanatoria with a view to lessening the annuities they are charged with." We know now that this advice was followed, and has continued to be followed, and we further know with what result. It is claimed, and in my opinion reasonably claimed, that the fall in the annual death-rate from phthisis in Germany, from 31 to 19, which took place within the period of 1886 to 1901, was very largely due to this action on the part of the whole organisation of the State sick insurance companies.

During the first years following this instruction, there were sent to various private sanatoria at the expense of the insurance companies close upon 4,000 clients for treatment. The following table shows the increase in numbers of consumptives treated in private sanatoria by the insurance companies during the first seven years:—

	Men.	Women.	Total.
1898, .	3,089	809	3,898
1904, .	15,229	5,386	20,615

Beginning with approximately 4,000 in the first year, the number increased at the rate of about 2,000 per annum, until in 1904 the number of clients treated in sanatoria for consumption touched close upon 21,000. The total number so treated during the seven years under review reached the enormous figure of 83,000.

It is obviously an inference to be naturally drawn from these facts that the insurance companies of Germany were satisfied with their experiment started in 1898, to employ sanatoria as a means of diminishing phthisis amongst their clients, otherwise they would not have continued to pursue through these successive years the course upon which they had embarked. It was then but a small step, and nothing more than a natural transition, for those companies to next consider, now that the sanatorial treatment of their clients had proved to be to their advantage, whether it was of sufficient advantage to make it worth while erecting their own sanatoria. If it paid private sanatoria to treat their clients for them for profit, it ought certainly to pay them to treat their own. So they argued. Gebhard, the Director of

the Hanseatic Sickness and Old Age Insurance Company, proved to them that, if out of 500 consumptives 140 could be so far restored as to be able to do without sick pay for a year, this would recoup the Company for their cost of treatment in a sanatorium and for the erection and maintenance of one of its own. They therefore took counsel together, and the erection of their own sanatoria was decided upon. Some idea of the scale upon which this decision has been acted will be gained when I state that the Regional Insurance Society has spent on special hospitals, by far the greatest part of which has been devoted to the erection and equipping of sanatoria for consumption, a sum of not less than £1,650,000; and, further, that about two years ago the representatives of thirty-seven insurance companies met and decided to spend approximately £2,000,000 sterling in erecting and providing sanatoria for their clients.

I commend these facts to the careful consideration of the advocates of the "commercial objection" who assert that it "does not pay" to provide consumptive sanatoria.

For almost thirty minutes your attention has been directed to a collection of facts drawn from a wide field, and you have been asked to consider the bearing upon the subject we are considering of the various figures which have been submitted. We are familiar with the unenviable reputation which statistics enjoy, and I share with my professional brethren here the prejudice which attaches to statistical evidence, whose reputation for mendacity is hardly inferior to that of a well-known New Testament character. Compared with the character borne by statistics, that of Ananias is one of spotless purity, the very emblem of truthfulness. And therefore I do not for one moment suggest that you should accept these figures in themselves as conclusive evidence of the thesis to the support of which they have been called. Of infinitely greater value and in infinitely higher regard do I hold the solid and balanced opinion of men of the world accustomed to weigh and sift evidence and to form opinions upon it, than any mere collection of figures. The views of such men, whether acting individually or as members of governing bodies and managing committees or business directorates, is best ascertained by observing their actions. Let us therefore look for a little at the action of some such who have had occasion to apply their minds to this subject. And in order to avoid the charge that our evidence has been drawn from a section of mankind whose interest in the subject is necessarily a special one, I shall endeavour to quote from

varied walks in life—from the humblest artisan plying his daily trade, from the successful business men and merchant princes and landed proprietors, up to the exalted rulers on the throne.

The evidence of the opinion held in royal quarters in regard to the influence of consumptive sanatoria is manifold. Let us cite a few instances.

To the erection and endowment of a sanatorium for the consumptive poor, the King and Queen of Sweden in the year 1905 devoted the whole of the sum presented to them by a loyal people to commemorate the semi-jubilee of their reign, amounting to nearly £100,000. It will be remembered that our own King, graciously pleased to accept the magnificent sum of £200,000 placed at his disposal by the munificence of Sir Edward Cassell, devoted the entire gift towards providing a sanatorium for the treatment of consumption in England. The transformation of the Helila Sanatorium in 1892 from a paying institution to a non-paying one for the poor of Russia was the beneficent act of His Majesty the late Emperor Alexander III of Russia. The children's sanatorium at Fredriksvorn, containing 100 beds, was erected under the patronage of Queen Sophia of Sweden. As far back as 1894, their Majesties the Emperor and Empress of Austria were instrumental in placing sanatorium treatment within the reach of the humblest in their land. And not only did they lend the weight and influence of their exalted position to this cause, but they donated the magnificent sum of ten thousand florins towards the original cost, and in this way largely contributed towards providing the Alland Sanatorium, near Vienna, with its 100 beds, all of which are at the disposal of the poor. In 1897, a sanatorium for the Dutch poor was erected and opened under the auspices of the Queen of Sweden, and we are now informed that the Empress of Japan is taking a forward part in promoting the erection of sanatoria for the poor in the eastern island empire. Such are the names of some of those in high places amongst the rulers of the earth whose practical action discloses to us the answer which, to their minds, should be given to the question with which we are attempting to deal this evening.

The famous philanthropic family Rachmanow, of Moscow, which applied 200,000 roubles, and the late magnificent act of Sir Kenneth and Lady M'Kenzie, of Seaforth, who have erected and equipped and endowed at a cost of £100,000, near Dingwall, a sanatorium for the poor of Ross-shire, are outstanding examples of the value attached by representatives of

the landowners to providing consumptive sanatoria. That conspicuous business ability which has enabled others to rise from the ranks of their fellows to the position of merchant princes, applied to the tuberculosis problem, has led them to express their views on the subject on a truly princely scale. May I quote, in passing, the names of some such. The Barnhill Sanatorium for Consumption at Perth owed its existence to the practical philanthropy of Sir Robert and Lady Pullar. Whilst the late lamented Earl of Airlie granted a free site on the Sidlaw Hills, it is to the liberality of the late Sir Alexander Moncreaf that the poor of Dundee owe the provision contained in the beautifully equipped institution at Auchterhouse. As far back as 1901, Mr. W. J. Crossley, of Liverpool, transferred his attention from engineering to consumption and to the result of his deliberations the magnificent sanatorium at Delamere, with its 130 beds, and costing somewhere about £80,000, bears eloquent witness. The donor of the beautiful sanatorium for the poor of London at Norwood prefers to remain anonymous.

It is not always practicable for Governments to grant support to worthy schemes even when these have their approval. But the annual contribution of nearly £7,000 made by the Reichstag towards defraying the cost of erecting new sanatoria in Germany, the recent erection and equipping of sanatoria by the United States of America, and a similar action by the Commonwealth of Australia and New Zealand, and the pronouncement issued by Scottish Local Government Board a little over a year ago, encouraging public bodies to use public funds for this purpose, indicate the conclusions to which those ruling assemblies have come in regard to the value of sanatoria.

The history of the sanatorial movement in America dates so far back, and the amount of good which has been accomplished there is so great, that it is impossible to go into the matter with any degree of fulness at this time. But let me hurriedly recall some of the outstanding landmarks.

The first private sanatorium—the precursor of hundreds of others—was founded in 1875. A year previous to that, in 1874, Dr. Edward L. Trudeau, finding himself stricken with the malady, in company with his wife, wandered out into the wilderness of Adirondack to work out his own physical salvation. After two years of rigorous life, with the temperature often 30° below zero, his health was restored, and he turned his thoughts towards the consumptive poor and wondered what he could do for them. He began in a small



way by taking a cottage, and gradually from this humble beginning there has emerged a great institution which now bears a world-wide reputation for the good work it has accomplished. It was here, it is interesting to note, that the late Robert Louis Stevenson spent the winter of 1889. Upon Trudeau's work rests the whole superstructure of the huge sanatorium movement of America. New York city provided its own sanatorium nearly ten years ago, and other cities have since followed suit. In 1903 the first sanatorium for children was founded at Stoney Wold by Miss Jane Newcombe. Massachussets erected at Rutland in 1898 the first sanatorium authorised by State legislation. Now the following States each possess their own sanatoria:—Connecticut, Indiana, Kentucky, Minnesota, South Carolina.

The Maryland Tuberculosis Commission appointed to study and report upon the subject—presumably a body of men specially qualified for the work—reported that the establishment of sanatoria has yielded most valuable service in the treatment of the disease. And now we find the United States of America erecting and maintaining sanatoria for the members of its fighting forces. Bayard Sanatorium, opened in 1899, is at the disposal of her land forces; and the larger organisation, built later at Fort Stanton, New Mexico, meets the wants of her marines. The cost of erection and maintenance of these is entirely defrayed out of the United States Treasury.

#### NEW ZEALAND.

The supervention of pestilence in a community is not usually regarded as a boon, but there are instances in history where it has proved to be not an unmixed evil. It would seem as if this were the case with regard to the outbreak of plague in New South Wales in 1899, for it led to the appointment of a Government Commission to investigate and to enquire into the state of health of the people; and this revealed to the authorities in New Zealand the alarming prevalence of phthisis in their midst. Legislation was enacted to deal with the situation, and amongst other powers given by the new laws to the medical officer of health, was the ability to compel local authorities to erect consumptive sanatoria wherever he thought these desirable. One half of the expense incurred by the erection of these sanatoria is defrayed out of the rates by the local authority, and the other half is paid by the central Government. In addition to this, in 1901 the Government, in a pre-eminently healthy district, in a range of hills

near Cambridge, bought a thousand acres of land, and on this it has erected a sanatorium for the poor. Except for the small income derived from patients who are able and willing to make a contribution towards their support, the Government of New Zealand defrays the entire cost of maintaining this institution.

Young in years as the life of nations is reckoned, New Zealand has given in this, as it has done in the direction of old age pensions, limitation of holdings, and industrial arbitration, practical expression to what remain in older countries the unrealised aspirations of the well-wishers of mankind.

#### NORWAY AND SWEDEN.

A remarkable fall in the mortality from consumption has taken place in Norway and Sweden during the past ten years. Up to that point it had been steadily increasing; since then, as the result of systematically dealing with the disease, the mortality has fallen in Bergen over 50 per cent, and in the country as a whole over 15 per cent. Dr. Somme, the Government Medical Officer of Health, in endeavouring to account for the change, states the most important agents in the crusade against tuberculosis in Norway to be—(1) tuberculosis laws, (2) nursing homes, (3) consumptive sanatoria.

The prevalence of leprosy in these countries for centuries has exerted an important bearing upon the employment of consumptive sanatoria as a means for dealing with the disease. The connection may not at first sight be evident. It arises in this way. Large sums of money set aside from the middle ages for the cure of lepers have now, owing to the marked decrease in leprosy in Norway, been liberated for other purposes. These are devoted to the needs of the tuberculous poor. The Lyster Sanatorium, costing £40,000 and providing 130 beds, was built in this way. In the same way leper hospitals, of which that at Recknes, with about 60 beds, is a good example, have been converted into consumptive sanatoria and placed under Government control.

In 1899, Switzerland possessed five sanatoria for its poor, and the number has been substantially increased since then.

Denmark occupies this unique position, that it is the only country in the world where the provision of sanatoria is now considered capable of fully meeting the demand.

It is possible now only to mention by name other countries in which sanatoria have been erected or are being supported by public or State funds—Canada, Australia, Spain, Portugal,

Roumania, Italy, Egypt, Belgium, Bulgaria—truly a formidable and comprehensive list. Is there not here a strong body of evidence that, in the opinion of ruling assemblies in Governments and States, sanatoria are worthy of support? But if there is so with the national representatives, what of municipal and smaller managing bodies—what of the towns?

The town of Moscow, out of its public funds, provides for the maintenance, upkeep, and general expenses of the sanatorium for the poor of that city. Paris Municipal Council maintains, and has for years maintained, a consumptive sanatorium in Angincourt for citizens. But for examples of municipal and poor law action, we need not go so far afield. We have them in abundance in Britain. Belfast Poor Law Guardians have quite recently completed and opened a sanatorium at Whiteabby for the treatment of phthisis with 280 beds, and the Corporation of Belfast has allocated a sum of £2,300 a year for the next ten years to place free beds at the disposal of working men in the Forster Green Sanatorium. Only the other day the Newcastle Town Council decided to spend £5,000 on adding Corporation beds to the sanatorium recently opened at Barraford, and to maintain these out of the public purse. Sheffield obtained special powers from Parliament and provided its own two years ago. The sanatorium at Heswall is the property of and is maintained by the Poor Law Guardians of Liverpool. Birmingham has selected a site, and the building of its municipal sanatorium is about to be commenced. And the public bodies of the three southern Scottish counties have combined to provide and maintain for the poor within their own borders a consumptive sanatorium. Such instances of municipal action might easily be multiplied, but they suffice.

Without a special act of Parliament to enable them to do so, the large working men's organisations in this country have no power to employ any of the vast funds at their disposal for the erection of sanatoria. But they can subscribe towards maintaining their members while these are inmates of such. The workers of England have successfully appealed to the public for funds to enable them to provide a sanatorium for the members of such organisations; and, thanks largely to the indefatigable efforts of H. R. H. Princess Christian, who has championed their cause to the public, the money has been subscribed, and quite recently a beautifully-equipped sanatorium, containing 200 beds, was opened as a result of these efforts at Beneden in Norfolk. No less than 40,000 of the Postal Union alone have voluntarily agreed to tax themselves to the sum of

2s. per year in order that, should occasion unhappily arise, they may have the advantage of sanatorium treatment in this institution. They are evidently convinced that for them consumptive sanatoria are worth while.

No one can ever justly accuse the directors on any insurance company acting in their corporate capacity of being liable to be swayed by emotional interests or by a tender regard for the happiness or welfare of the human race. There is one principle, and one principle alone, which guides them in their business policy, and that principle is how to make most money for their shareholders. When we find such directors deliberately spending millions of capital on consumptive sanatoria, and annually spending hundreds of thousands of pounds in supporting their tubercular clients in such sanatoria, then we are, I take it, justified in concluding that in their opinion at all events it pays better to cure phthisis than to subsidise it, and that in the sanatoria they have the most powerful instrument at their command for enabling them to achieve the end they have in view.

#### WHAT ABOUT BRITAIN?

Ten years ago there was only one consumptive sanatorium in Britain, and it was more than ample for the demand made upon it, for there were often empty beds. Now there are over sixty such, and the cry is still for more. The supply is unequal to the demand. What does this mean? It means that a change has come over the opinion of medical men in this country, and that in two directions. In the first place, they are coming more to realise the truth of that distinguished German savant—von Leyden's—words, "There is no specificity in the part of any particular climate in the cure of consumption, but I think it very essential that the majority of tuberculous patients be treated and cured in the climate in which they have afterwards to live and work." And, in the second place, they are realising the advantages to be gained by sanatorium treatment of consumption, and are sending their patients to those institutions, convinced that for the patient "sanatoria are worth while."

In closing, may we ask what is the local bearing of these facts with regard to Glasgow? Last year there were notified as dying from pulmonary tuberculosis in Glasgow 1,513 persons, one half of whom roughly were males. In addition, 1,135 died of other forms of tuberculosis, and 3,365 died from disease of the lungs certified other than phthisis. I disclose no secret

when I state that it is a matter of common knowledge that a certain number of those classed under the last head suffered from consumption. In the circumstances, there is good reason for stating that not less than 700 males died of pulmonary consumption in the city of Glasgow in the year 1906. The average age at which these deaths took place was roughly 31 years, and taking the ascertained average wage-earning capacity for England and Wales, 30s. per week is a fair average wage earned by those sufferers when in good health. Now, insurance companies inform us that dying at 31 years, those who then succumb had their life and rate-paying term curtailed by twenty years. It is thus merely a matter of arithmetic to ascertain what the mortality from consumption is yearly costing the city of Glasgow in ultimate wage-earning capacity. Calculated on this basis, the annual loss amounts to over £1,000,000 sterling. If it pays insurance companies to preserve their clients' lives for the premiums they then continue to pay them when so restored, does it not seem probable that if—with a view to lessening the enormous annual drain upon her resources, in addition to the heavy claims made by that section of survivors who, deprived of their breadwinners, become chargeable to the Poor Law rates—the Corporation of Glasgow were to provide one or more consumptive sanatoria, and maintain them as they do the other Infectious Fever Hospitals out of the rates, their experience would prove here, as it has done elsewhere, that such expenditure is worth while.

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## CASE OF INJURY TO THE MOTOR AREA OF THE BRAIN.<sup>1</sup>

By G. BURNSIDE BUCHANAN, B.A.CAMB., M.B., C.M.,

Assistant Surgeon, Western Infirmary, Glasgow, and to the Glasgow Cancer Hospital.

ON 17th May, 1907, William R., a ship's carpenter, was working at the bottom of a dry dock at Ardrossan when a block of wood (measuring about 1 ft. square by 3 ft. long, such as is used to support the keel of a ship in dry dock) fell on his head from a height of 25 or 30 ft., inflicting a

<sup>1</sup> Read before a meeting of the Glasgow Medico-Chirurgical Society held on 17th January, 1908.

compound fracture of the skull. The patient was knocked down insensible, but soon recovered consciousness to some extent, and was removed to the Western Infirmary, Glasgow, within a few hours of his accident.

On admission, there was found to be a large irregular wound on the right side of the head about the parietal eminence. There was a comminuted fracture of the skull, and some of the fragments were depressed and partly under the edges of the skull opening. In addition, a piece of wood about two fingers-breadth in width and about a quarter of an inch thick was embedded in the brain. The wound was bleeding profusely, and there was a large amount of effusion around it. The patient was dazed, but not entirely unconscious. He was unable to move the limbs on the left side, and on that side there was facial paralysis.

The patient was put lightly under chloroform, when the head was shaved and cleansed, the wound enlarged, and the loose fragments of bone elevated and removed. On withdrawing the piece of wood there was sharp bleeding, which was easily controlled by pressure. The cavity was well wiped out, and several detached pieces of brain tissue, splinters of wood, and particles of grit were removed. The wound was packed with iodoform gauze, and the edges brought together as far as possible. The splinter of wood was found to be about one inch in length; it was split in pieces, and was rather dirty. It projected forwards and inwards towards the middle line for about an inch. On account of the soiling of the wound an injection of antitetanic serum was given as a prophylactic measure. This gave rise to no obvious reaction of any kind.

On the 19th the packing was removed, when the brain surrounding the cavity, which, by the way, was large enough to admit three fingers, was pulsating freely. A drainage-tube was inserted instead of the gauze. For the next week or two a considerable amount of fluid and softened brain matter was discharged from the sinus, but there was no suppuration. At the end of the month the wound was closing by granulations, but on account of the continued discharge of necrotic brain tissue in small quantities the sinus was kept open with a narrow tube. By this time there was a slight gain of power in the left leg, but the arm remained quite paralysed, and both arm and leg showed slight signs of atrophy.

The patient all this time remained quiet and fairly sensible during the day, but at night he was usually sleepless, restless, and noisy, and required constant watching to prevent him

from jumping out of bed; he appeared to be mildly delirious, but was often sufficiently conscious of his behaviour to apologise in the morning for being so unruly. Phenacetine, sulphonal, trional, bromides, and paraldehyde were all tried without benefit, and morphine alone was able to quiet him.

By the 8th July the sinus had closed, and a granulating surface was left on the wound. As the edges of the skin were curled inwards and embedded in the cicatrix, they were dissected free and undercut, while the granulating surface was sliced off, and the wound then closed with sutures. This healed rapidly, and the patient from this time became quiet and peaceful at nights, and slept well without drugging; and this condition continued till his dismissal on 26th July.

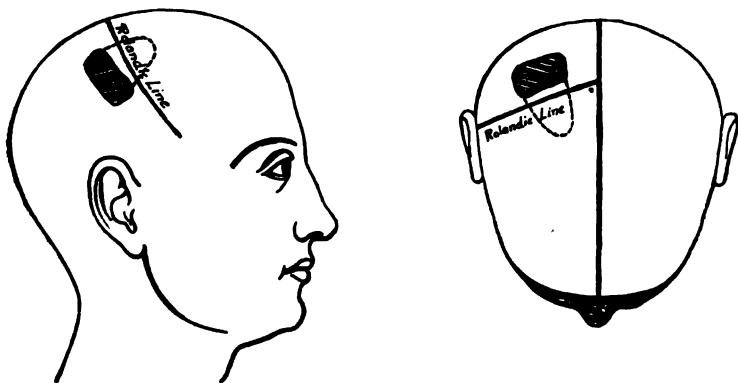
At that date the paralysis of the face was only slightly apparent. The leg was much stronger, but still very weak, and the patient could not walk without a great deal of assistance. The left arm was much thinner than the right; there was slight movement in it, but the limb was practically useless.

On 25th October the patient was examined at his own home. For the last two months he had been more or less confined to bed. He was at times very restless and obstreperous, and, as a rule, particularly so at nights, and required fairly large doses of bromides to quiet him. He was inclined to be sleepless, and was easily irritated by even slight noises, and especially by the children playing outside and people working at a dock near at hand. His general functions remained satisfactory, however, the bowels acting regularly, and urination being normal. His appetite was rather excessive, and he was considerably fatter than before his accident.

The scar on the head was found to be smaller than on his dismissal from hospital, and the surface was completely covered with hair. It was evidently composed of dense fibrous tissue, which yielded but little on pressure, and showed almost no pulsation. The centre was depressed nearly half an inch. The edges of the opening in the bone were rounded and somewhat indefinite. The skull defect was then an irregular oblong with rounded corners, measuring approximately 2 inches long by 1 broad. It lay obliquely on the skull, parallel to the Rolandic line (*i.e.*,  $67^{\circ}$  to the sagittal suture), and its anterior lip lay half an inch behind this line, the upper edge being  $1\frac{1}{2}$  inch from the middle line of the head and the lower  $3\frac{1}{2}$  inches. It thus occupied the

position assigned to the posterior limb of the Rolandic convolutions and the part immediately behind that, corresponding mainly to the arm centre. As the sinus pointed obliquely forwards, the anterior limb must have been injured also, and the adjacent parts implicated in the inflammatory and cicatricial process.

There was no apparent interference with the eye mechanism, and the eyelids could be opened and shut. The pupils were equal and reacted to light. The brows could be raised, depressed, and wrinkled apparently almost normally. There was slight flattening of the left side of the face, and the actions of the levator and depressor anguli oris were weaker



The shaded part shows the shape and position of the scar. The broken line shows the direction of the sinus.

than on the right side. An attempt to whistle was not very successful, and he complained of a feeling of "thickness" of the lips on the left side of the mouth. There was some dribbling of saliva, which he thought came from the left side. He could work his jaws and tongue to good purpose. There was no marked alteration of the movements of the head and neck, and the trapezius was apparently normal.

The limbs on the right side of the body could be freely moved. In the left shoulder, however, there was little, if any, movement, the elbow could not be flexed or extended, and the hand and fingers could not be moved voluntarily. But in all parts of the upper limb there was a certain amount of tonic spasm, most pronounced in the flexors of the little finger.



The muscles on the whole were considerably smaller than on the right side, but the skin did not show any glossiness. The left leg could be flexed a very little on the body, but the tonic spasm prevented him from extending it voluntarily, and it remained usually at a slightly obtuse angle. The knee-jerks on both knees were very much exaggerated, reacting to a very slight tap, but that of the left leg perhaps more than the right. The foot could not be extended, and the limb was useless as regards standing. There was distinct ankle clonus of the left foot, and a very slight sign of it on the right. Plantar irritation gave rise to flexion of the toes on both feet. The skin of the leg also was in good condition, and this may be attributed to the massage and other means by which his wife attended to his care and comfort. The right thigh measured  $15\frac{1}{2}$  inches round the middle part, while the left measured  $14\frac{1}{2}$  inches. The right calf measured  $11\frac{1}{2}$  inches round, while the left measured 11 inches. No electrical tests were made, as means for the purpose were not available.

The chief points of interest in this case are—

1. The small amount of damage done by such a missile falling 25 to 30 ft.; indeed, the concussion was so slight that the patient was more or less conscious before he left Ardrossan.

2. The absence of suppuration notwithstanding the dirtiness of the wound and the continued loss of brain substance; this was confirmed by repeated cultures of the discharge.

3. The effect of removing surface irritation in relieving the restlessness and insomnia.

4. The recovery of certain parts formerly paralysed, just as in cases of cerebral hæmorrhage followed by rigidity, and the absence of Jacksonian attacks in spite of the extensive cicatricial process; confirming the general rule that such attacks almost never appear in recent scars, but only after cicatricial contraction has been well established.

The prognosis of the case is not very satisfactory. The patient is unfit to look after himself, and for domestic reasons he is more or less bedridden. The cerebral irritation is decidedly worse than when he left hospital, and his doctor finds it increasingly difficult to quiet him with sedatives. Also, his general mental condition is deteriorating.

On 16th January, 1908, his doctor informed me that his bodily condition was then much the same as in October, but mentally he was much less restless and irritable.

The question of a further operation to relieve pressure on

the scar was raised, but I did not encourage the hope of much benefit to be derived from it except in the event of epileptic attacks coming on. The main treatment advised was continuing the abundant nourishment, the administration of bromides in sufficient amount to ensure rest, and the maintenance of such quiet as was possible in his surroundings.

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## CASE OF MULTIPLE EXOSTOSES IN A RACHITIC SUBJECT.<sup>1</sup>

By ARCH. YOUNG, B.Sc., M.B., C.M.,

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THE patient, a man of 33 years, consulted me recently on account of hæmorrhoids. Accidentally, in the course of examination, I became aware of the fact that he had an outgrowth of considerable size over the lower right antero-lateral aspect of the chest, and more careful investigation disclosed the fact that other abnormalities of a similar nature existed.

These were found to have a distribution closely related to the sites of bony enlargements in rickets, of which affection the man had obviously been the subject. This relation, though already pretty well recognised, suggested the exhibition of the patient to the Society.

The following is a short outline of the patient's history so far as it affects the subject of chief interest. In infancy and early childhood the patient suffered from rickets. He did not walk till he was 6 years old, but is not aware that he was specially deformed in legs or body until at the age of 14 years his legs "gave," and he developed a moderate degree of genu valgum.

About twelve years ago, *i.e.*, at the age of 21, he noticed for the first time the appearance of a tumour on the right antero-lateral aspect of the chest. This has grown slowly ever since, and is thought to be still growing. About the same time (*i.e.*, twelve years ago) there began to develop certain marked prominences, now amounting to

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 20th December, 1907.

definite tumours, at the upper and internal aspects of the tibiae, about the situation of the now well-recognised (but, in the literature of the subject, hardly ever mentioned) tibial spines of rickets.

Three years ago, *i.e.*, at the age of 30, a small lump appeared over the right clavicle, evidently directly continuous with it. This was noticed after recovery from an attack of enteric fever.

These are the only outgrowths which the patient himself was definitely cognisant of prior to my examination.

A well-marked deformity of the right fore-arm dating back, in its origin, as far as twenty years ago, *i.e.*, to the time when he was 13 years old, was well known to the patient, and is explained by him as having come on by, and, indeed, been due to, his special use of the right hand and fore-arm during his apprenticeship at that time as a mason. He had for a long period then a pretty constant dull pain in and about the right elbow, and the fore-arm gradually became bent in a remarkable way. No history of any injury to the fore-arm is obtainable, nor can the most searching cross-examination elicit any information suggesting that the outgrowth from the clavicle might be due to the result of an old fracture of that bone.

The patient's family history is good. One brother and four sisters are alive and well, also his mother. All are free from any deformity. His father died of "mason's trouble"—probably pulmonary tuberculosis.

The man's height is 5 feet. His skull is somewhat boat-shaped, the vertex prominent, and also the parietals and occipital. The spine is very little, if any, deformed. The clavicles are unduly curved. The prominent outgrowth on the right clavicle is situated 5 cm. from the acromial extremity, the clavicle here measuring 3.5 cm. antero-posteriorly.

The chest is slightly pigeon-shaped; the lower part of the sternum is depressed. The tumour spoken of is situated on the lower antero-lateral aspect on the right side, its anterior edge 14 cm. from the middle line in front, its posterior edge 18 cm. from the middle line behind, its lower edge 8 cm. (in the erect posture) above the iliac crest. It seems to be attached to the eighth and ninth ribs, somewhat overlapping the tenth rib, but apparently unattached to it. It projects 3.5 cm. from the surface, measures 6.5 cm. horizontally and 6 cm. vertically. It is of very hard consistence, has a nodose or tuberculated outline, is evidently to a certain extent pedunculated, and admits of slight to and fro movement.

The humeri are of equal length, not much curved, and show some enlargement of their lower ends, the epicondyles being specially prominent, more particularly the internal epicondyle on the left side.

The left fore-arm is well developed, the upper and lower ends of radius and ulna a little enlarged. The right fore-arm is notably deformed, presenting a marked curvature, with its convexity towards the radial and extensor aspect. Both bones are obviously much thickened; the olecranon and head of the radius are considerably enlarged, the latter displaced backwards and outwards, lying below and behind the external humeral epicondyle. The radial styloid is prominent, the ulnar almost, if not quite, undeveloped, so that there seems to be a gap between the lower end of the ulna and the carpus, and the hand is, as a result, deflected to the ulnar side. The movements of pronation and supination of the fore-arm are greatly limited. Flexion at the elbow is satisfactorily carried out, but the hand is carried across the chest and not directly upwards towards the shoulder. Extension at the elbow is limited to the extent of fully 45 degrees. The length of the right fore-arm (from external epicondyle to the radial styloid) is 20 cm.; on the left side the measurement is 25 cm. The girth of the right fore-arm immediately below the elbow is 22 cm., at middle, 21 cm., immediately above the wrist, 16 cm.; as against 26 cm., 23 cm., and 17.5 cm. on the left side. The hands are equal in size, the movements at the wrist free on both sides, and the carpus similar in each.

The distal extremities of the metacarpals are all thickened, especially the fifth on both sides, where a prominent nodule is seen and felt on the extensor aspect.

The phalanges are all somewhat nodular at their extremities, especially the flexor aspect of the proximal phalanx of each finger, where a definite nodule seems to limit flexion. The forefinger and midfinger of the left hand are slightly displaced in an angular manner to the lateral aspect at the first interphalangeal articulation. Flexion is limited, and a prominent nodule is visible on the dorsal aspect of each.

The right thumb and fingers can be fairly well flexed on the palm. The little finger of the left hand can be completely flexed. The ring finger shows some limitation of flexion movement at the metacarpal-phalangeal and the proximal interphalangeal joints. The middle and forefingers cannot be flexed to any extent at the metacarpal-phalangeal joints.

The pelvis presents some deformity, both iliac crests being somewhat convoluted. The right iliac crest is much thickened

anteriorly, being distinctly nodular from the anterior superior spine backwards for 12 cm. At greatest thickness it measures 6 cm.

The femur on each side is unduly curved, laterally and in the antero-posterior direction.

There is moderate genu valgum, the internal condyles touching when the feet are separated to the extent of 10 to 12 cm. In this position the tumours at the upper ends of the tibiæ are also in contact. The femoral condyles are prominent, but are not to any degree nodular.

The tibiæ are very slightly curved. The upper end of the right tibia presents an extreme prominence of the tibial (rachitic) spine, most marked at a point 6 cm. below the lower edge of the patella and 12 cm. below the adductor tubercle of the femur. From this point upwards as far as the upper margin of the tibia on the inner side there is a slightly nodulated overgrowth.

The left tibial (rachitic) spine is replaced by a considerable nodose tumour, measuring 7 cm. vertically and 6 cm. in superficial transverse extent.

The right tibia at its lower end shows a nodular enlargement, most prominent 6 cm. above the tip of the internal malleolus, the main bulk of the enlargement being on the inner aspect, but extending forwards to some extent. At the same level the lower end of the fibula is thickened, and a bursal swelling is present over the prominence on the front of the external malleolus. There is no limitation of movement at the ankle.

The left tibia shows an enlargement at its lower end, in the same position as on the right tibia, but not of so marked a character.

The right foot presents a condition of slight hallux valgus. On the left foot this condition is also present, but of more marked degree, the great toe being displaced completely outwards beneath the second toe and to a slight extent even under the third.

Without entering into the many interesting problems presented by this case it will be sufficient to draw attention to three special points.

Firstly, as regards the tumours, no apology seems necessary for labelling these exostoses. The term is used here in its widest sense as meaning a tumour of, or outgrowth from, bone. Whether the outgrowths are chondromata or osteomata matters little, for both are known to occur in association with

rickets, and both types occur in just such situations as in this case, viz., at or about the growing or cartilaginous ends of the long bones. Also, both are frequently multiple, as here.

Besides, chondromata frequently undergo ossification, and osteomata as frequently, if not indeed always, show a cap of cartilage. Both, too, probably develop in connection with, or actually from, islets or "rests" of cartilage left over, cut adrift, from the epiphyseal or primary cartilage, which is the seat or determinant of ordinary bone growth, these islets being separated from the rest in the process of disorganisation at the sites of active growth of the bones, which is characteristic of rickets and its bone manifestations.

The thoracic tumour, as well as the tibial outgrowths, are composed, at least in a good part of their bulk, of bone. This is easily seen on the fluorescent screen, and has been confirmed by actual radiographic photographs.

An interesting point also suggested for discussion by this case is that of the meaning of the tibial (rachitic) spines, which here have been in great measure replaced by, or transformed into, actual tumour growth. No satisfactory explanation of their nature is yet forthcoming.

The only other point has reference to the very striking deformity of the right fore-arm. Here there is, it appears, a very clear relation between the effects of muscular action and bony deformity, the wielding of a mason's mallet at a period when (to judge from the patient's own story of his legs "giving" about that time) there was something in the nature of late or "local" rickets present, having led to the fore-arm, wielding the mallet from day to day, becoming very markedly deformed, while the left, being unexposed to the strain, almost altogether escaped deformity.

The condition of the fore-arm bones, the lower end of the right humerus, the thoracic tumour, the tibial extremities and outgrowths, and the bones of the hands and fingers, has been ascertained definitely by radiographs, and these parts, as well as practically the whole of the bony skeleton, have been carefully examined by means of the fluorescent screen. The radiographs will be exhibited at a later meeting of the Society.

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OPERATIVE PROCEDURES IN RELATION TO DISEASE  
OF THE FRONTAL AND SPHENOIDAL SINUSES.<sup>1</sup>

By W. S. SYME, M.D.,

Assistant Surgeon, Ear, Nose, and Throat Hospital, Glasgow.

THE frontal sinus has been the subject of much surgical ingenuity, and we have now a variety of procedures of varying complexity—from simple opening of the cavity to the complicated operation of Killian. But before turning to these methods, let me say a word or two about the intranasal treatment of frontal sinus disease. This aims only at the drainage of the cavity, or, if it aims further than this, at opening it up to any extent, it should be at once condemned.

For purposes of drainage, we endeavour to remove obstruction from the infundibulum and from the fronto-nasal opening. In acute cases, such as occur sometimes in a "head cold," the obstruction may be due to turgescence of the mucous membrane covering the middle turbinate and the adjacent region, and the application of an astringent to these parts may be followed by immediate relief. I have known a weak solution of adrenalin to act thus. The ordinary 1 in 1,000 solution should not be used. The reaction when it is used is anything but pleasant, as I can testify from personal experience. A dilution of 1 in 20,000 will be more satisfactory. In more chronic cases, where there are no urgent symptoms, and this means the large proportion of cases, we should endeavour to effect a cure by promoting efficient drainage before resorting to an external operation. For this purpose, any obstruction in the nostril should be removed as a preliminary. This may mean the correction of a deflected septum, removal of a spur, and so on. Often it means the extirpation of polypi. But the chief intranasal operative procedure in this connection is removal of the anterior end of the middle turbinal. Following this, gentle curetting of the upper part of the infundibulum and of the entrance to the sinus may be necessary. In this way the subsequent treatment of the diseased cavity by frequent douching is facilitated. By this means cure will result in a certain

<sup>1</sup> Paper read and patients shown at a meeting of the Glasgow Medico-Chirurgical Society held on 17th January, 1908.

number of cases. Enthusiasts, such as Hajek, claim that the great majority of cases of frontal sinus disease can be cured by intranasal methods and frequent douchings. When, however, we are told that a hundred or more sittings are sometimes required, we realise that, though our art is long, life is short; and, moreover, the conditions found during the performance of an external operation make one sceptical of the permanence of cure in many of these cases. All the same, I think it will be acknowledged that, *cæteris paribus*, intranasal treatment should be given a fair trial.

Coming now to the question of external operation, we may aim at the simple opening of the cavity or at its obliteration. The former has the advantage that the contour of the face is not interfered with, but it has the fatal disadvantage that it very seldom results in a cure. It may take the form of a plastic operation, a large part of the anterior wall being temporarily raised, and then replaced after the cavity has been curetted. This, however, is not more satisfactory. Attempts have been made to obliterate the cavity after careful curettage by filling it with bone plugging of some kind, but I am not aware that this method has met with any measure of success. Indeed, from the great probability of reinfection through the nose, it seemed doomed to failure. So that we may give serious consideration only to those operations which aim at obliteration of the sinus by allowing the soft parts to fall in.

The first attempt in this direction was by complete removal of the anterior wall, together with enlargement of the fronto-nasal opening by breaking down the anterior ethmoidal cells and immediate closure of the incision. This is known as the Ogston-Luc operation. In the male patient shown, this is the procedure which was adopted on the right side.

Jansen, looking to the unsightly depression which is sometimes left by this operation when the sinus is large, sought the obliteration of the cavity by removal of the floor, and Kuhnt ignored the æsthetic effect, and dealt with the disease by the removal of both anterior wall and floor. Killian combined all these methods, but considered the æsthetic effect, and left a narrow bridge of bone in the region of the super-ciliary ridge, and so preserved the prominence of the eyebrow. This operation was carried out on the left side in the male patient. But Killian's frontal sinus operation goes further than this, and has reference not only to the frontal sinus itself, but also to the anterior ethmoidal cells, and, if need be, to the posterior ethmoidal cells and the sphenoidal sinus.



This in its entirety was the operation performed on the left side in the female patient. Let me describe it in some detail. After the usual surgical preliminaries a curved incision is made, extending from the outer end of the supra-orbital prominence to the root of the nose, and then downwards and outwards to the angle made by the upper jaw with its ascending process. After separating the soft parts, two parallel incisions are made through the periosteum, about an eighth of an inch apart, and over the most prominent part of the ridge, where the narrow bridge is to be left. This is according to Killian, but probably this safeguard is more honoured in the breach than in the observance, and in the



The black line shows the incision in Killian's complete operation.



Killian's complete operation. Anterior wall and floor of frontal sinus, and ascending process of maxilla removed. Bridge left.

three instances in which I have performed this operation, I have made the initial incision down to the bone, and have separated periosteum and soft parts together. The supra-orbital nerve may be respected if it is thought worth while. The sinus is then opened by burr or chisel, the size determined by the aid of the probe, and the anterior wall removed. The periosteum is then stripped from the floor, the contents of the orbit being treated as gently as possible in the process. The floor is removed by the chisel or by forceps adapted for the purpose, the difficulty in doing so varying with the depth of the sinus. Care must be taken not to fracture the narrow bridge of bone. In both these patients the cavity was deep,

in the man especially so. In another case, at present under my care, it was very shallow. The inner wall and the angles of the sinus are thoroughly curetted, the success of the operation depending much on the diligence with which this is carried out. Care must be exercised in dealing with any carious areas which may be found in the inner wall. The next step consists in removing the upper part of the ascending process of the maxilla, preserving, if possible, the mucous membrane lining its inner surface. The nose is now opened into, the anterior ethmoidal cells are broken down, and the fronto-nasal opening enlarged to the fullest extent. If the middle turbinate has not already been removed in part or in whole, it should now be dealt with, and if, as in the case of the female patient, there is accompanying disease of the posterior accessory cavities, the posterior ethmoidal cells, and the sphenoidal sinus, this can be treated from the external wound. From my experience of this complete operation in the female patient, I can support the claim that it gives a very easy access to these deeper parts. I need hardly say that the curetting, though it should be carried out thoroughly, should be done with the greatest care, and with a proper appreciation of the anatomy of the part. On no account should any force be exerted in an upward direction—that is, towards the cribriform plate of the ethmoid and towards the roof of the sphenoid. As in other operations on the frontal sinus, a drain may be passed from the cavity into the nose and allowed to remain for some time, or packing may be introduced for a day or two, the opening into the nasal fossa being kept patent subsequently by intranasal treatment. This is the method I have adopted in respect to the thirteen frontal sinuses on which I have operated. The whole incision is then closed.

The most frequent modification of Killian's operation is that which limits it to the frontal sinus, the ethmoidal cells being removed, partly through the naris and partly by working downwards through the ostium.

In dealing with disease in both frontal sinuses, a vertical incision has occasionally been used so as to expose both cavities. It is evident that this will be of service only when it is intended to remove the anterior walls alone. It has, however, been used to permit of a plastic operation. A square of bone is raised so as to open into both sinuses, the inter-sinusal septum is removed, both cavities are curetted, one single large opening is made into the nose by removing a

wedge from the upper part of the nasal septum so as to join both naso-frontal canals, and the square piece of bone is replaced. It is ingenious, but hardly likely to be more satisfactory in its result than the plastic operation on a single sinus. As a rule, it is better to deal with both sides separately. In the woman whose photograph I show, it was found during the operation on the right side that the septum between the two sinuses was partially destroyed and that both cavities were emptying themselves into the right nostril, no pus having been observed coming from the frontal region in the left nostril. I, however, attacked the left sinus by a separate incision, but as no opening was found into the left nostril, I decided not to make one, but permitted both cavities to drain by the right fronto-nasal opening. I am inclined to think the cure would have been expedited if I had made an opening from the left frontal sinus into the left nostril.

When much deformity results from the falling in of the soft parts—and this will depend on the size of the sinus—an attempt may be made to overcome it by the injection of paraffin. This I did in the case of the man shown to-night, and the stereoscopic photograph compared with his present appearance shows the improvement which this proceeding may effect.

From the fact that so many methods have been devised to combat frontal sinus disease, it will not be surprising to hear that to obtain complete cure is a matter of no little difficulty. To lessen the discharge, to diminish the odour, and so to make the condition at least bearable to the patient is attainable more or less satisfactorily by any of the methods of treatment, but to abolish the discharge entirely requires not only attention to details during the operation, but much post-operative care and patience.

There is no doubt that the accompanying ethmoidal disease is to blame for many failures, and it was this which induced Killian to suggest his complete operation. I am bound to say that in none of my cases has a cure resulted so quickly as in the woman on whose sinus this procedure was adopted, and this is the more satisfactory because in her the disease was fairly extensive and all the accessory spaces on that side were involved.

All operations, and perhaps the incomplete especially, are attended with a certain amount of danger, both to life and to adjacent structures, and though it is claimed for Killian's method that it is the safest as far as life is concerned, it certainly has dangers of its own in relation to the eye, leading



CASE I (a).

Ogston-Luc operation on left side. Incomplete Killian on right side. Both frontal sinuses were very large.



CASE I (b).

The same, after injection of paraffin to remedy deformity.



CASE II.

Killian's complete operation on left side.



CASE III.

Ogston-Luc operation on both sides.



to orbital cellulitis, temporary paralysis of the superior oblique from interferences with its pulley, and, it may be, of other external ocular muscles.

Forerunners of a fatal issue are spreading osteomyelitis of the skull, septic meningitis, and septic thrombosis passing backwards into the intracranial venous channels.

It is possible that all the various external operations on the frontal sinus have a place, and that the best results will be obtained by adapting the operation to individual cases, and to the conditions found on opening the cavity.

*Sphenoidal disease.*—As with the frontal sinus, so with this cavity, irrigation should be given a trial before its opening up is decided on. We have then the choice of several methods. One has already been described, by removal of the ascending process of the maxilla; but though, as I have said, this gives a short and direct means of access, I should not recommend it except when the operation on the frontal sinus has also to be undertaken. Others, however, recommend it even for disease limited to the posterior spaces. If the maxillary antrum is diseased as well, as it frequently is, the sphenoidal sinus may be attacked through the maxillary space during the operation on the latter. Attempts have been made to open the cavity through its lowest side by way of the naso-pharynx, but the thickness of this wall offers great difficulty to what would appear to be the most rational method. So that, as a matter of fact, the most usual way to deal with disease in this part is to remove the anterior wall, working through the anterior naris. Various instruments—perforators, hooks to pass into the natural opening of the sinus and then to break down the wall, special chisels, and so on—have been devised to effect this purpose. For myself, I always use a long-handled sharp spoon. This is inserted into the groove where the ostium is and where the bone is thinnest, that is, at the outer and upper part of the wall, and with a screwing movement it is not difficult to make a breach, after which the removal of the whole wall is a simple matter, except for the lowest part, where a chisel may sometimes be required. Except in cases of atrophy of the middle turbinal, a condition not unusual in sphenoidal disease, removal of this structure, and it may be, of the posterior ethmoidal cells, which are, as a rule, also diseased, will be necessary as a preliminary measure. After curetting the cavity I am in the habit of swabbing it with a strong solution of zinc chloride. The opening tends to close rapidly, so that in the after-treatment excessive granulations must be kept down. It

must be understood that all operative procedure in the deeper parts of the nose should be controlled by the eye, by the aid of a good reflected light. In the patients shown the sphenoidal sinuses were dealt with through the anterior nares, with the exception of the left in the female patient, which, as I have said, was treated during the course of the Killian operation. To deal efficiently with the right sphenoidal sinus in this case it was necessary to remove a right septal spur.

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## PRELIMINARY NOTE ON QUININE SULPHATE AS A FACTOR IN THE CAUSATION OF BLACK- WATER FEVER.<sup>1</sup>

BY D. M'CAY, M.B., CAPT. I.M.S.

THE results obtained from investigations carried out on the hæmolysis of the red blood corpuscles seem to have a very important bearing on the supposed action of "quinine" in causing blackwater fever.

In health it has been found that the action of sulphates in any form upsets, for a time, the osmotic equilibrium that normally exists between the red blood cells and the plasma in which they float.

In a series of observations on this action of different sulphates—quinine sulphate, magnesium sulphate, and dilute sulphuric acid—a very serious decrease was obtained in the total inorganic salts of the plasma, implying a serious decrease in the osmotic tension of the plasma. The red cells being impermeable, no change takes place in the number of their inorganic molecules; but, by endosmosis, water passes into them, causes them to swell up and, if the decrease in the plasma is sufficient, eventually to burst and extrude their hæmoglobin.

In blackwater fever the hæmolysis is due probably to three

<sup>1</sup> This note is reproduced in substance from an extra inset of a recent number of the *Indian Medical Gazette*. It was brought under our notice by Dr. Alex. Napier, who writes as follows:—"For at least five and twenty years I have used, and taught others to use, only the *hydrochloride* of quinine, on the grounds that it is naturally the proper salt to introduce into an organ which normally contains free hydrochloric acid, that it is much more soluble than the sulphates, and also contains a larger combining proportion of the alkaloidal base."—Ed. *G. M. J.*

factors—(1) injury to the stroma of the red corpuscles caused by the malarial parasites; (2) the presence of an hæmolysin; (3) administration of sulphates. (1) and (2) may be sufficient to produce blackwater fever, but (3) may become the precipitating cause when (1) and (2) are ineffectual—i.e., the sudden lowering of the number of inorganic molecules in the plasma, due to the action of sulphate on the inorganic salts of the plasma, may become sufficient to produce a difference in pressure between the plasma and the injured red corpuscles which those corpuscles cannot withstand.

Further research showed that while sulphates caused a lowering of the resisting power of the red corpuscles to hæmolysis, chlorides caused an increase. In every experiment where quinine hydrochloride (particularly when combined with sodium chloride and dilute hydrochloric acid) was given, no fall in the salts of the plasma took place, but usually a well-marked rise.

As malaria is the underlying factor in the cause of blackwater fever, and, as in order to get rid of that source of danger, quinine must be given, the rational indication for both prophylaxis and treatment is to avoid giving sulphates in any form, and to administer quinine in the form of the hydrochloride or acid hydrochloride.

In addition to sulphates, large quantities of alkaline carbonates or compounds of alkalies with vegetable acids and potassium salts should be avoided. These all tend to lower the number of inorganic molecules in the blood, and therefore to bring the red corpuscles nearer their hæmolytic point.

On the other hand, chlorides (quinine hydrochloride, calcium chloride, and sodium chloride) have the opposite effect, and tend to increase the resisting power of the corpuscles.

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## Obituary.

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PROFESSOR SIR THOMAS M'CALL ANDERSON, M.D., F.F.P.S.G.

SIR THOMAS M'CALL ANDERSON, whose death we announced in our last issue, will be widely missed. He had occupied for so long a prominent position in the profession throughout the kingdom, and he had been for so long a teacher in our medical school, that his loss will be felt by a larger circle than usual.

Sir Thomas came of an old Glasgow family which was closely connected with the profession of medicine. His father, the late Dr. Alexander Dunlop Anderson, was a well-known practitioner in Glasgow, and was President of the Faculty of Physicians and Surgeons, 1852-1855. Sir Thomas was a grandnephew of Dr. John Anderson, Professor of Natural Philosophy in the University of Glasgow, and founder of "The Andersonian," and a cousin of Dr. Andrew Anderson, who was President of the Faculty, 1868-1870.

Having received his general education in Edinburgh, M'Call Anderson studied medicine in the University of Glasgow, graduating in 1858 M.D. "with honours." After holding the office of Resident Physician in the Royal Infirmary he studied in several of the schools on the Continent. Soon thereafter he was appointed Lecturer on the Practice of Medicine in Anderson's College, and, later, Physician to the Royal Infirmary. Here it was that he made his mark, and he soon attracted a large number of students to his clinique. His success as a clinical teacher was enduring, and after he was transferred to the Western Infirmary in 1874, having become Professor of Clinical Medicine, his clinique continued to be attended by a very large class. He held the clinical professorship for twenty-six years, and on the retirement of the late Sir William T. Gairdner in 1900, he was transferred to the Chair of Practice of Physic. In addition to clinical medicine, dermatology was a subject to which he early devoted himself. He was one of the founders of the Hospital for Skin Diseases, which at first took the form of an out-patient clinique in Elmbank Street. This institution subsequently came to an arrangement with the managers of the Western Infirmary whereby two wards in the latter were set apart for the treatment of in-patients. One of the results of this was



SIR THOMAS M'CALL ANDERSON.



that members of his clinique had the advantage of special instruction in skin diseases. While it is correct to state that M'Call Anderson's reputation rested more on his work in dermatology than in clinical medicine—his treatise on *Diseases of the Skin* was, and is still, a well-known book—he wrote copiously on various subjects connected with clinical medicine. Of these latter, his best known works were on *Acute Phthisis* and *Syphilitic Affections of the Nervous System*.

In 1897 he was appointed by the War Office Examiner in Medicine for the British and Indian Medical Services, and he was the first physician out of London to hold this post. In 1905 he received the honour of knighthood, and last year he was appointed one of His Majesty's Honorary Physicians in Scotland, to fill the vacancy caused by the death of Sir William T. Gairdner.

It is difficult, in a few words, to appraise M'Call Anderson's work as a teacher. Many held that he was inclined to go but superficially into his cases. This is partly true; but his method of grasping and demonstrating the salient features of, and of diagnosing and treating a given disease, was one which appealed to a large number, and which had advantages so far as senior students were concerned. This was not, however, the whole secret of his success as a teacher. That was largely due to the organising faculty which he possessed, and which he made full use of in instructing a large class. Whether engaged in demonstrating cases before the whole class, or in taking the students in sections, with the help of his clinical tutors, the same careful system was observed to be at work, a system the aim of which was to make plain and clear up as far as possible the difficulties of his subject in the brief time at the disposal of the student.

Utilising the moments was his strong point, and while his almost mechanical punctuality was sometimes felt by laggards to be a grievance, there can be no doubt that he taught many and many a man habits of work which were afterwards to prove invaluable in the life of a busy practitioner.

He was possessed of an inborn courtesy which never deserted him. When faced by situations which would have made most men irritable, M'Call Anderson retained his calm and courteous manner. This it was which, extended to assistants, students, nurses, and patients alike, made it a pleasure to work with him.

He never paraded his religion; he did not let his right hand know what his left was doing; but more than one

instance has been brought to our notice where, in the charities of life, his unostentatious benefactions carried happiness to a stricken fellow-creature who knew not whence his help had come.

Within the past few years our medical school has lost several of her well-known figures. Of these none will be more widely missed than Thomas M'Call Anderson.

Sir Thomas is survived by his widow, a son, and five daughters. Of these last, the eldest occupies a prominent place in the nursing world. She served with the army in South Africa during the late war, and, in addition to the Queen's Medal, received the decoration of the Royal Red Cross. She was recently appointed matron of St. George's Hospital.

To Lady M'Call Anderson and family we tender our respectful sympathy.

## CURRENT TOPICS.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION ("GLASGOW MEDICAL JOURNAL"): ANNUAL MEETING.—The annual meeting of the Association was held in the Faculty Hall on 24th January, the chair being occupied by Dr. John Rowan. The Treasurer's and Editors' reports were submitted by Dr. Edington and Dr. Monro respectively. They were both of a very satisfactory character, and it was noted that the losses by death and resignation were more than made up for by the new members. The reports were adopted, and the Treasurer and Editors were thanked for their services. The following office-bearers were elected for 1908:—

<i>President,</i>	. . . .	DR. JOHN ROWAN.
<i>Vice-Presidents,</i>	. . . .	{ DR. L. R. OSWALD. MR. JAMES GRANT ANDREW.
<i>Editors,</i>	. . . .	{ DR. THOMAS KIRKPATRICK MONRO. MR. GEORGE HENRY EDINGTON.
<i>Secretary,</i>	. . . .	{ DR. W. B. INGLIS POLLOCK, 276 Bath Street.
<i>Treasurer,</i>	. . . .	{ MR. GEORGE HENRY EDINGTON, 20 Woodside Place.
<i>Auditors,</i>	. . . .	{ DR. GEO. A. ALLAN. DR. ARCH. W. HARRINGTON.

*General Business Committee.*

DR. J. WYLLIE NICOL.  
 PROF. ROBERT MUIR.  
 DR. R. T. HALLIDAY.  
 DR. ROBT. FULLARTON.

DR. H. H. BORLAND.  
 DR. LEONARD FINDLAY.  
 DR. J. KING PATRICK.  
 DR. ARCH. YOUNG.

**ROYAL INFIRMARY APPOINTMENTS.**—The following appointments have been made to the Gynæcological Department:—  
 Dr. G. Balfour Marshall, F.F.P.S.G., to be Senior Gynæcologist in charge of the ward, in room of Dr. J. K. Kelly, resigned; Mr. W. D. Macfarlane, Jun., M.B., C.M., to be Dispensary Gynæcologist; and Mr. David Shannon, M.B., Ch.B., to be Extra Dispensary Gynæcologist.

**SCOTTISH POOR-LAW MEDICAL OFFICERS' ASSOCIATION.**—We have been favoured with the report for the past year of the Scottish Poor-Law Medical Officers' Association.

The policy of contra-advertising being continued during the year in the medical journals, there has consequently been a large number of applicants for information as to vacant appointments, and the information afforded has not only been much appreciated, but exceedingly useful.

The causes of friction brought to the knowledge of the Association have been much the same as in former years, but mention is made of a somewhat unusual case, where "a Parish Council insisted on the medical officer making regular visits to the paupers on the out-door roll, whether his professional assistance was required or not, the cost to the medical officer in making these visits amounting to 20s. or 30s. for horse hire"—a duty the Association considers falls, according to the Local Government Board, on the shoulders of the inspector of poor rather than the medical officer.

Acting on the advice of Mr. Cathcart Wason, M.P., the Association's Bill to amend the Local Government (Scotland) Act was withdrawn, and introduced in a new and improved form, entitled The Parochial Medical Officers' (Scotland) Bill. It consists of practically one clause, which declares that a medical officer holding office under a Parish Council in Scotland, under the Poor-Law (Scotland) Act, 1845, shall only be removable from office by or with the consent of the Local Government Board for Scotland. Mr. Wason, M.P., did not manage to get the Bill read a second time last session, but it is his intention to re-introduce it in the forthcoming session of Parliament. It is understood that the Secretary for

Scotland has promised to give the Bill his serious consideration in the event of the Local Government Board introducing legislation to amend the Poor-Law in Scotland.

The Association's Secretary, Dr. W. L. Muir, Glasgow, had the honour of appearing before the Royal Commission on Poor-Law during the summer in Edinburgh, on the question of tenure of office and other matters of interest to poor-law medical officers.

The annual meeting took place in St. Enoch Hotel, Glasgow, on 31st January, at which the report was unanimously adopted. The treasurer's account for 1907 shows a balance in the bank of £111, 1s. 6d., which speaks well for the prosperity and usefulness of the Association, whose interest we heartily commend to the profession, as performing a much-needed and useful work towards those members, particularly in the Highland districts, who individually are not in a position to help themselves.

**THE ELECTRO-THERAPEUTIC SECTION OF THE ROYAL SOCIETY OF MEDICINE.**—On the recommendation of the Scottish members of the Electro-Therapeutic Section of the Royal Society of Medicine, the London Council has agreed to hold the May meeting of the Section in Glasgow, in the hall of the Royal Philosophical Society, on Friday, 22nd May, at 8.30 P.M. On that occasion three papers will be read, one by Dr. Lewis Jones of London, another by Dr. Dawson Turner of Edinburgh, and a third by Dr. Samuel Sloan of Glasgow. Many of the English members are expected to be present. The meeting will be open to all medical gentlemen.

A local committee has been formed, consisting of Dr. Samuel Sloan, Dr. D. J. Mackintosh, M.V.O., Dr. Maxtone Thom, and Dr. Robert Pollock, with Dr. W. F. Somerville as secretary, to make the necessary arrangements. The committee is endeavouring to arrange for instrument makers to give an exhibition of electrical apparatus during the afternoon and evening of the day of meeting.

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1907-1908.

MEETING V.—29TH NOVEMBER, 1907.

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*The President, DR. WALKER DOWNIE, in the Chair.*

I.—MEDIASTINAL CANCER, OCCURRING TEN YEARS AFTER  
REMOVAL OF THE BREAST, WITH SECONDARY NODULATION  
WELL DISTRIBUTED OVER THE HEAD AND TRUNK.

BY DR. J. SOUTTAR M'KENDRICK.

Dr. M'Kendrick's paper is published as an original article in our issue for February, 1908, at p. 106.

*Dr. A. A. Young* referred to a case of recrudescence eighteen years after removal of the primary growth. He thought that skin nodules were not specially rare.

*Dr. A. Gray* urged caution in the use of trypsin, as two cases in which it was used died suddenly in the Cancer Hospital. This was the more striking in that neither case seemed in a critical condition. Both cases became comatose, and on *post-mortem* examination the kidneys were found considerably congested. There was also ecchymosis of the stomach.

*Dr. G. Burnside Buchanan* thought that skin nodules were fairly common.

II.—CASES OF RENAL CALCULUS, WITH SPECIAL REFERENCE TO  
DIAGNOSIS.

BY DR. DAVID NEWMAN.

[ABSTRACT.]

Dr. Newman gave an account of eight cases of renal calculus selected to illustrate special points of difficulty in diagnosis, and he demonstrated by means of the opaque projector the value of cystoscopic examination in furnishing important



information in all the cases described. While in most cases met with in practice the size, shape, composition, and location of a stone in the kidney or ureter can be diagnosed with mathematical precision, in others the symptoms are misleading and the physical signs are wanting. He described first a typical case where all the symptoms and physical signs were characteristic, and then followed a series of atypical cases, including examples of reno-renal, reno-testicular, and reno-vesical reflex pain in which the disease in the first instance had been diagnosed as "lumbago," "acute cystitis," "chronic cystitis," or "disease of the testicle," pain in the diseased kidney being entirely absent. The cystoscope in such cases was of the highest value, not only eliminating vesical disease but locating renal affections. The main points to study were—The appearance of the ureter orifices; the character of the urinary shoots as regards size, form, composition, and frequency. These were shown on the projector screen, and Dr. Riddell showed a number of valuable x-ray photographs illustrating the points raised in the paper.

[For full paper, see *British Medical Journal*, 1908.]

### III.—CASE OF MACROGLOSSIA.

By DR. WALKER DOWNIE.

Macroglossia is a very rare disease of the tongue, and though it is usually of congenital origin, symptoms of its presence may not develop till after puberty.

The case which I desire to describe to-night, and of which I show a photograph, is the most marked example of hypertrophy of the tongue which has come under my observation. I have seen several cases of hypertrophy of the tongue in a minor degree in idiots and in cretins, and examples of these are occasionally met with at the dispensary of the Sick Children's Hospital. But the very great hypertrophy of the tongue here presented, unassociated with mental defect or a suppurative process, is very rare.

The patient was a male child, 14 months old when first seen by me. The child was fairly well nourished, and appeared intelligent for its age, but no teeth had erupted. He made no special attempts to walk, and the possibility of even infantile speech was barred by the size of the tongue.

Nothing unusual had been observed about the child until it was 6 months old, when the tongue seemed to be too large for the mouth. But there must have been some swelling of the tongue at an earlier date, for from the first there had been

considerable difficulty experienced in feeding. From the time that the tongue first appeared to be too big for the mouth, it steadily continued to increase in size.

When I first saw the child, the tongue not only filled the mouth very completely, but a large part of that organ was constantly extruded.

The tongue was enlarged as a whole and equally so. It was soft to the touch, as is the healthy tongue, except that portion which remained constantly outside of the mouth, and which was dry on the surface. There were no ulcers present, and there was no abscess. There was no tumour nor nodules in the tongue, and there was no sublingual swelling, and no enlargement of the lymphatic glands. A course of grey powder with bicarbonate of soda was prescribed, and for two months the child remained under observation. At first there seemed to be evidence of improvement, both in the size of the tongue and the child's general condition, but progress did not long continue. The tongue again showed signs of increasing in size, and the child began to lose flesh and to become more feeble. Removal of portion of the hypertrophied tongue was then suggested, but the mother refused to entertain the proposal. She ceased to attend at the infirmary, and the child was lost sight of.

In this case the lingual hypertrophy appeared to be congenital, and the cause which determined its growth could not be discovered. In every other respect the child appeared to have been healthy at birth, and nothing unusual, apart from some difficulty in feeding, had been observed until the child was 6 months old. The child was contented, and appeared to suffer no pain, and the tongue was neither inflamed nor ulcerated at any time. While asleep, respiratory difficulty was not uncommon.

Butlin, in his work on *Diseases of the Tongue*, says that the changes which are most decided in macroglossic tongues are connective tissue hypertrophy and dilatation of lymphatic spaces. The enlargement of the blood-vessels is quite secondary in importance, and may be accounted for by the greater supply of blood needed for the nourishment of the hypertrophied organ.

Most authors are agreed that the diseased condition of the lymphatics is the essential element in macroglossia, and that all other changes which have been observed are secondary to this. Virchow likened macroglossia to elephantiasis. In both there is dilatation of the lymphatic vessels and connective tissue hypertrophy; in both the affection seems

capable of being excited or aggravated by attacks of inflammation.

In treatment, the use of both mercury and iodide of potassium was successfully employed by Bryant. When the disease does not respond to the exhibition of these drugs, and when the hypertrophy is great, removal of the protruding portion of the tongue has been practised in some cases; and this operation is recommended by Butlin. The operation, may be done by means of the knife, snare, galvano-cautery, or ecraseur, but preferably by the knife. By the removal of wedge-shaped portions, the remaining part may be given a form somewhat resembling the normal tongue—a result greatly to be desired.

#### IV.—CASE OF ACUTE GLOSSITIS FROM INJURY ENDING IN SUPPURATION.

BY DR. WALKER DOWNIE.

The patient, a boy, aged 15 years, was admitted to the Western Infirmary under my care on 6th November, and I am indebted to Dr. Mitchell, my house surgeon, for the particulars of the illness.

The story given by the boy was that seven days before admission he had accidentally swallowed a piece of hard crust. As the crust passed over the back part of the tongue he felt pain, as if the part was being pricked or scratched. The part so injured remained sore, and on the following day he had pain on swallowing. Two days later the tongue began to swell; the swelling continued to increase until the floor of the mouth was raised to a level with the teeth, and the neck under the ramus of the jaw on the right side became prominent. The act of swallowing was accompanied by much pain, as were all movements of the lower jaw, and on admission to hospital he could not move his tongue, and could not protrude it.

On admission, his temperature was 100·8° F., his pulse was 108, and his respirations 16 per minute. The patient kept his mouth constantly open; the tongue was seen to be raised up, and, on palpation, it was found that the right half of the tongue was much more swollen than the left. It was hard to the touch, and pressure on the swollen portion caused much pain. Palpation of the floor of the mouth gave the sensation of boggiess, without actual fluctuation, so the patient was put to bed. The mouth was frequently laved with warm

boracic lotion, and hot fomentations were applied externally. At the end of two days there was evidence of the presence of pus, and it was arranged to open the abscess on the following morning, but early on that morning (9th November) the abscess burst, the opening being on the right side of the floor of the mouth, between the first molar tooth and the body of the tongue. The opening was enlarged by stretching with sinus forceps, the doing of which gave exit to a large quantity of dark-coloured, foul-smelling pus. The opening was kept free by the daily use of the forceps. The evacuation of the abscess was immediately followed by the fall of the temperature to normal and the rapid subsidence of the swelling, which, in other ten days, was wholly gone.

A culture made from the pus was found to consist entirely of streptococci.

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MEETING VI.—20TH DECEMBER, 1907.

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*The President, DR. WALKER DOWNIE, in the Chair.*

PRESIDENT'S REMARKS ON THE DEATH OF LORD KELVIN.

Before beginning the public business of the Society to-night, it would, I think, be most appropriate were I, as your President, to give expression, though only in a word, to the sense of loss which the University and the city of Glasgow have sustained in the death of Lord Kelvin.

I need add nothing to what has already been recorded by the press of every country regarding his great attainments and his epoch-making discoveries and inventions. But I might remind you that, as Sir William Thomson, he gave in this hall and to this Society a highly interesting lecture "On the Diffusion of Liquids and Gases," illustrated by experiments to show the extreme slowness of the diffusion of liquids on the one hand, and the great rapidity of the diffusion of gases on the other.

I thought it would be well that we should record in our minutes the deep sense of the loss to science entailed by his death; for although he had long passed the allotted span of human life it could not be said of him, "Superfluous lags the veteran on the stage." He was still the foremost figure in

physical and electrical science, and was, up till the moment of the onset of the illness which ended in death, actively engaged with his secretary in giving to the world the results of his most recent investigations.

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# I.—ABNORMAL PULSATION IN THE PHARYNX.

BY DR. JAMES GALBRAITH CONNAL.

## [ABSTRACT.]

Dr. Connal showed a series of nine patients, and read notes of three others, making twelve in all, who had an abnormal pulsation in the pharynx, namely, six women, three men, and three boys. In three of the cases the abnormal vessel was bilateral. The pulsating vessel is situate below and behind the posterior pillar of the fauces, and in most of the cases ascends to the nasopharynx. In four of the cases it was small, but with distinct pulsation; in the other eight it gave one the impression of a large vessel. Dr. Connal discussed the identity of the vessel, and thought that in the slighter cases of pulsation the vessel might be the ascending pharyngeal artery, but in the more marked pulsation it was probably an abnormally tortuous internal carotid artery. An interesting point was that of the patients shown three were boys, whose ages ranged from 6 years to 11 years, all had nasal obstruction in the presence of adenoids or tonsils and adenoids, and in one of these boys the pulsation was bilateral.

[For full paper, see the *Journal of Laryngology*, March, 1908.]

Dr. Walker Downie agreed with Dr. Connal that there were probably various vessels causing visible pulsations in the pharynx. He did not think that Dr. Connal had mentioned the chief danger in connection with these cases. It consisted not so much in the opening of abscesses or in the removal of adenoids, but rather in the removal of tonsils with a sharp pointed bistoury.

Dr. Syme thought pulsations in the pharynx were not so rare as Dr. Connal indicated. In one case he found a pulsating vessel in the centre of the pharynx after he had operated for the removal of adenoids; fortunately the curette had stopped short of the vessel. This case had deeply

impressed him with the necessity of a very careful search for any pulsating vessels in the pharynx before operation.

*Dr. Connal* replied that the condition was certainly very rare in young children.

## II.—CASE OF MIDDLE-EAR DISEASE WITH INVOLVEMENT OF THE LATERAL SINUS.

BY DR. JAMES GALBRAITH CONNAL.

*Dr. Connal's* paper will be published as an original article in a future issue of the *Journal*.

## III.—CASE OF MULTIPLE EXOSTOSES IN A RACHITIC SUBJECT.

BY DR. ARCH. YOUNG.

*Dr. Young's* paper will be found as an original article at p. 183.

*Dr. MacLennan* remarked that the term exostosis given to the bony outgrowths need not be taken exception to, for, though they were apparently tumours, they were of an absolutely benign nature and did not call for treatment as a rule. These outgrowths occurring in connection with rickets were to be explained as due to an excessive irregularity in the formation of the bone; they occurred on the ends of the bones in the neighbourhood of the epiphyseal cartilages. Osteoblasts were expressed or migrated from their proper place, and ultimately proceeded to grow in their new situation, producing bony masses. The formation of the tibial spines, which were the most common instances of bony outgrowth associated with rickets, were probably due to an attempt on the part of nature to produce bone where it was required. As iron filings sprinkled upon a piece of paper over a magnet arranged themselves in certain lines corresponding to the lines of force, so bone tended to be produced in the lines of force corresponding to the line of pressure of the superimposed weight. As an instance in point, a well-marked tibial spine in a case of genu valgum due to a congenital dislocation of the patella and unassociated with rickets disappeared when the patella was fixed in position by operation. Further, these tibial spines tended to disappear after osteotomies performed to correct such rickety deformities as genu valgum.

*Dr. Ivy M'Kenzie* said that the tumour masses in this case appeared to be at or near the epiphyseal junctions of the

bones, and this at once suggested an association with disturbances during the developmental period. During the period of acute rachitic disturbance the line of ossifying cartilage cells disappeared, sometimes at parts and not infrequently entirely. This was associated with an irregularity in the line of junction between epiphyses and diaphyses. The vessels of the medulla grew in between the imperfectly calcified cartilaginous masses, and when the healing process set in the calcification began, not in the most advanced masses of cartilage cell which were by this time scattered beyond the advancing medullary vessels, but in those cartilage cells which by this time would have been calcifying had the rachitic process not taken place. It was thus obvious that when the normal process of ossification once more began there would be small masses of cartilage left on the diaphyseal side of the line of ossification. Such masses were easily demonstrable in severe cases of rickets which had begun to heal; they were for the most part absorbed in time by the osteoclasts, but such as remained might give rise to tumour masses such as this case represented. The exostoses have been seen in some cases to disappear by absorptive process, but there was always the possibility that such tumour masses, outside the normal organismal economy, might with any disturbance of the balance of growth assume a serious aspect. A mass such as this patient presented on his right side could not be explained on the assumption that it represents a compensatory process.

#### IV.—DEMONSTRATION OF DOUBLE TUMOURS.

BY DR. M. LOGAN TAYLOR AND DR. JOHN H. TEACHER.

##### [ABSTRACT.]

The term "double tumour" is here used to signify a growth consisting of two distinct types of tumour formation. It is not a "mixed tumour" in the ordinary sense, *i.e.*, it is not a teratoma. The two tumour formations either occur together in one organ, or they are adjacent to one another and more or less overlap and intermingle.

[Full paper to be published in the *Journal of Pathology*.]

CASE I.—*Sarcoma and adeno-carcinoma of the body of the uterus.*

Mrs. S., æt. 65. Characteristic history of carcinoma of the uterus. Cured on 27th March, 1907. Report by

Dr. Teacher—"Adeno-carcinoma." Hysterectomy on 2nd April, 1907. A rounded tumour, about the size of a tangerine orange, occupying the fundus was reported "round-celled sarcoma" by Dr. W. Rolland. Dr. Teacher then took a large section through the tumour and adjacent tissue and found the principal tumour to be sarcomatous and the thickened endometrium in the lower part of the body to be clearly adeno-carcinomatous. A secondary tumour in the cervix is a sarcoma.

CASE II.—*Carcinoma (or endothelioma) and adeno-carcinoma of the body of the uterus.*

J. C., æt. 48, had a characteristic history of carcinoma of the uterus. Curettings reported (11th May, 1906) papillomatous overgrowth of glands of doubtful innocence and also definite carcinoma. Hysterectomy on 20th May, 1906. Uterus showed a tumour mass on anterior wall and papillomatous outgrowth from rest of wall of body. Dr. Teacher reported the mass as a carcinoma; but Dr. Taylor is inclined to regard it as endothelioma. The papillomatous condition is now regarded as adeno-carcinoma. The two conditions are well defined from one another, but there are a few masses of cells having the character of the carcinoma apparently invading the adeno-carcinoma.

CASE III.—*Carcinoma and sarcoma of the thyroid.*

Mrs. C., æt. 53, had a tumour of the left lobe of the thyroid of four years' duration. Patient died two weeks after operation for removal of the growth, the symptoms pointing to an obstruction of the bronchus which had not been present before the operation. Microscopical examination of the tumour shows two distinct types of growth—(a) carcinoma of glandular type with well-developed stroma; (b) mixed-celled sarcoma. The carcinoma appears to be the primary growth. The stroma has evidently become sarcomatous, and is gradually destroying the carcinoma. In some places islets of carcinoma can be seen remaining in the midst of the sarcoma. *Post-mortem* examination was not allowed.

CASE IV.—*Mediastinal sarcoma and adeno-carcinoma of the thyroid.*

Mrs. R., æt. 28. History of removal of "cyst" of thyroid in 1892. Apparently not examined microscopically. Present illness began in August, 1907. In October a large hard tumour



was found protruding through the sternum and into the root of the neck. Death took place in November, 1907.

*Post-mortem.*—Very large white tumour, filling middle of upper part of thorax, growing through sternum and into neck. This was the tumour recognised clinically. Continuous with it and partly embedded in it is a light brown mass, which extended up on both sides of the trachea. From sections prepared by Dr. G. Haswell Wilson the white tumour is found to be a spindle-celled sarcoma having secondaries in lungs, liver, kidney, and lymphatic glands. The brown tumour is adeno-carcinoma of thyroid having secondaries in the lymphatic glands of the neck and perforating the trachea. At some distance from the main mass of the thyroid tumour there is a small portion of it embedded in the sarcoma. In one gland of the neck there is double infection, and there are numerous nodules of the sarcoma in the principal thyroid growth. Probably the thyroid adeno-carcinoma is much the older growth, and may be the cause of the more active sarcoma.

*CASE V.*—*Melanotic sarcoma of eye becoming widely disseminated; carcinoma of liver originating from bile-ducts.*

H. A., æt. 42, had an eye removed in the Glasgow Eye Infirmary in January, 1904, for a melanotic sarcoma of the choroid. The growth had penetrated the sclera, so that there was an extra-ocular portion as well as the intra-ocular growth. Microscopical examination of the intra-ocular growth shows it to be a pigmented spindle-celled sarcoma. The extra-ocular growth is also a spindle-celled sarcoma, but part of it has a distinct alveolar arrangement of the cells, which is absent from the intra-ocular growth. It is also less pigmented than the intra-ocular portion. Patient died in the Western Infirmary, Glasgow, in March, 1906, from metastases.

At the *post-mortem* examination pigmented and non-pigmented metastases were found in the skin, serous cavities, and in almost every organ and bone in the body. The secondary growths, speaking generally, conform to the type of the primary growth in the eye, i.e., there are pure pigmented spindle-celled growths and less pigmented growths of the alveolar type. In some places these occur quite separate from one another, in others they appear to be mixed.

In addition, in the liver there are distinct nodules of carcinoma, unpigmented, and in parts having a well-developed

**stroma.** The arrangement of the cancer cells bears a very close resemblance to the form of the interlobular bile-ducts; in fact, it would appear as if the sarcomatous metastases had induced a new carcinomatous growth in the liver originating in connection with the bile-ducts. In some of the growths in the omentum and peritoneum both carcinoma and sarcoma appear to be present.

**CASE VI.**—*Adeno-carcinoma of the body of the uterus and adeno-carcinoma (double?) of both ovaries.*

Mrs. X., æt. 48, had the usual symptoms of carcinoma of the body of the uterus. Curettings were examined, and the condition reported by Dr. Taylor as adeno-carcinoma. The uterus and ovaries were removed. The ovaries were each found to be about the size of a tangerine orange, and were partly cystic and partly of solid structure. Microscopical examination revealed an adeno-carcinoma of each ovary of the type resembling the simple colloid ovarian cystoma. The Fallopian tubes were perfectly normal. In addition to the carcinoma of the ovaries there is an excessive proliferation of the epithelium of the Graafian follicles, producing a type of new growth quite distinct from the adeno-carcinoma.

**Conclusions.**—All six cases appear to be examples of double tumour, and a causal relationship is suggested between the one and the other in each case.

Case III presents a close analogy to the mouse tumours in which carcinoma after repeated transplantation appeared to stimulate the connective tissues of the host to the formation of sarcoma, which in a few generations outgrew and destroyed the original tumour. Case IV is similar, and presents a perfect example of double malignancy.

Cases I and V appear to be examples of sarcoma stimulating the development of carcinoma, and Case II of carcinoma (or endothelioma) inducing carcinoma of a different type. In Case V it was the secondaries transplanted to a distant organ which had this effect.

Case VI, besides showing double tumour in the ovary, raises the question of the source of origin of the colloid ovarian cystoma.

[The full report of these cases will be published in the *Journal of Pathology*.]

The *President* referred to a case of epithelioma of the

uvula which he removed seven years ago. This was followed by the development of a sarcoma in the neck.

*Dr. G. Burnside Buchanan* referred to an epithelioma of the hand followed by a sarcoma of the arm.

V.—THE SPIROCHÆTA PALLIDA AND ITS ÆTIOLOGICAL  
RELATIONSHIP TO SYPHILIS.

BY DR. IVY M'KENZIE.

Dr. M'Kenzie's paper will be published as an original article in a future issue of the *Journal*.

VI.—CARD SPECIMENS.

A. BY DR. JOHN ANDERSON.

Demonstration of renal preparations:—

1. Case of enlarged kidney with calculi (operated upon); complete atrophy of right kidney.

2. One of two kidneys which showed calculi in each, with dilatation of pelves and calyces.

3. Kidneys from a case of cardiac hypertrophy and dilatation, with acute pleurisy and infarction of the lung—treated in medical wards; two large calculi in the right kidney—compensatory hypertrophy of the left.

4. Kidneys from a case in which the symptoms pointed to the right side; a small calculus was present in the left kidney, the right being unaffected.

5. Advanced tuberculous kidney; similar appearances on both sides; chronic tuberculous cystitis.

6. Kidney from a case of double hydronephrosis; similar appearances on the other side. The case was in hospital on account of a carcinoma of the sigmoid flexure; there was no history of any symptoms suggesting the kidney condition.

7. Example of a kidney from a case of double congenital hydronephrosis. (This was previously shown by Dr. Hamilton and Dr. Anderson to the Pathological and Clinical Society.)

B. BY MR. GEO. H. EDINGTON.

1. Specimen of myxo-sarcoma of the prostate. (Microscopic sections by Dr. Leonard Findlay.)

2. Stereo-photographs—(a) Thyroid dislocation of the hip;

(b) pathological subluxation of the knee; (c) traumatic aneurysm of the anterior tibial artery.

C. BY DR. ALEX. MACLENNAN.

A series of stereo-photographs, including tinted photographs of ulcers, and views of other surgical conditions.

## OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1907-1908.

MEETING I.—23RD OCTOBER, 1907.

*The President, DR. E. H. L. OLIPHANT, in the Chair.*

### I.—SPECIMENS.

A. BY DR. E. H. L. OLIPHANT.

Fibroid of uterus with carcinoma of body, fibroid tumour having been present for five or six years. Operation by Dr. W. L. Reid. Two microscopic slides shown.

B. BY DR. J. M. MUNRO KERR.

1. *A large fibromyoma of the uterus which had undergone sarcomatous degeneration.*—This patient had been seen by Dr. Kerr eight years previously, when the question of operation was considered. A senior gynæcologist of the city had advised against operation, and the patient then decided not to have any surgical treatment. Dr. Munro Kerr had been again asked to see the patient two months ago, when he came to the conclusion, from the emaciation of the patient and from the small multiple nodules that were to be felt over the tumour, that the growth was probably malignant. The patient was admitted into a medical ward of the Western Infirmary, where she died. The tumour was removed *post-mortem*, and was then found to be of the nature described.

2. *A spindle-celled sarcoma of the ovary.*—The tumour was removed without any difficulty, there being no adhesions, and the patient, aged 40, had been sent to Dr. Munro Kerr by her

medical attendant on account of a intractable uterine hæmorrhage.

3. *A ruptured ectopic pregnancy of about ten weeks.*—The interesting feature in this case was the fact that the patient was brought into the Maternity Hospital by her medical attendant, who was under the impression that he had perforated the uterus with his curette. A supposed uterine abortion had occurred some few weeks previously, and, because the uterine hæmorrhage continued, the patient's medical attendant dilated and curetted the uterus. Shortly after this operation the patient collapsed, and she was brought into hospital almost moribund. On opening the abdomen, the cavity was found filled with blood and the ruptured right tube was discovered. This was removed as quickly as possible, and the abdomen closed. The patient died very shortly after the operation.

## II.—NOTES ON A CASE OF CRIBRIFORM HYMEN.

By DR. A. LOUISE M'ILROY.

The following description of a case where the above condition was present may be of some interest owing to its comparative rarity:—

The patient, an unmarried woman, æt. 35, came to the Out-patient Department of the Victoria Infirmary complaining of pain on micturition, burning in character, and having been present for several months.

She had always been healthy, with the exception of pain in the back occurring eleven years ago and lasting several weeks. This, she thinks, was due to severe straining while at stool. Two years ago patient was treated by a doctor for pain in the anal region.

Menstruation began at 15 years of age, occurring every four weeks and lasting two days, and at no time was the period accompanied by pain.

Micturition has never been frequent; no leucorrhœal discharge has been present. The bowels have always been constipated.

On examination, the patient appeared well-developed and healthy-looking; nothing abnormal was found on palpation of the abdomen.

On inspection of the vulva, the external genitals were normal with the exception of the hymen. This membrane covered over the orifice of the vagina completely, and on closer

inspection showed the presence of four perforations, having the following situations:—One in the centre, being rounded in outline, and admitting the point of a sound; one close to the former, triangular in shape, and being separated from it by a band of tissue; the remaining two openings were near the orifice of the urethra, the more central one being rounded in outline, the other being oval.

On passing the sound through these openings, it appeared to pass to the normal length of the vaginal cavity; each opening communicated with the other three, but not with the urethral orifice.

Over the whole membrane were numerous small pits or depressions.



Cribriform hymen.

There was tenderness on pressure on the hymen only.

*Per rectum*, the cervix was felt to be normal in length and thickness; the uterus was in good position; the appendages were not felt.

Examination of the urine revealed nothing abnormal.

I had the opportunity later of seeing the patient at the end of a menstrual period, and of observing the flow to be escaping through the central opening. I suggested that the patient should come into hospital for a more thorough examination, but as the urinary trouble improved under treatment she did not wish to do so.

The accompanying diagram shows the condition.

*Dr. Carstairs Douglas* said that the cribriform is the rarest form of malformation, and is interesting from a medico-legal point of view.

The President, *Dr. Lindsay*, *Dr. Macfarlane*, and *Dr. Town (America)* also spoke.

### III.—OVARIAN FIBROID COMPLICATING PREGNANCY: CÆSAREAN SECTION AND REMOVAL OF TUMOUR.

BY DR. J. M. MUNRO KERR.

The following is the report taken from the Ward Journal:—

Mrs. C., aged 35, vi-para, was admitted to the Glasgow Maternity Hospital on 8th September, 1907, at 12.10 P.M.; delivered a few hours later. Duration of labour, sixteen hours; child (female) alive, 8½ lb., 21 inches long; placenta, 1½ lb.; cord, 19 inches.

*History.*—Patient was sent in by Dr. W. He first saw the patient this morning at 9 A.M., by which time she had been more than twelve hours in labour. On making a vaginal examination, he felt a large tumour, apparently growing from the sacrum, obstructing the passage. He applied forceps, however, and for the space of two hours he and another medical man attempted to deliver the patient by that way, but all in vain.

*Previous history.*—Patient has had five children without any difficulty. The fifth needed forceps because of the same tumour, which the doctor said was then not quite so large. He advised her to have it seen to when she recovered, but the patient neglected his advice.

On admission, patient was having strong pains still, and these occurred every three or four minutes. On examination, a large, hard, and smooth tumour was felt. It pointed forwards to within 2 inches of the symphysis. Above this the foetal head was felt. The os was fully dilated.

Dr. Munro Kerr was sent for.

*Operation.*—An incision equidistant above and below the umbilicus (about 6 inches). The uterus was incised, and swabs packed round it. The placenta was beneath the uterine incision.

The child was resuscitated with difficulty; the back of the head was badly marked by the forceps.

The uterus was then amputated. There was some difficulty in tying the uterine arteries. The cervical stump was stitched and the peritoneum closed over it.

The tumour was next examined. It was found to be a solid one of the right ovary, closely adherent low down on the pelvis (adherent to the bowel and pelvic fascia). It was separated from its adhesions and the pedicle ligatured.

The abdomen was flushed out well with saline solution, and through and through sutures applied. A large drainage-tube was left in the lower end of the wound to drain the pelvis.

Patient lived for forty-eight hours after the operation. All that time she was very restless, and the heart finally gave way. Stimulants of various kinds had been tried, and saline solution was given. The pulse-rate never fell below 130. The temperature varied between 100° and 101° from the date of admission.

Mrs. C., aged 32, was admitted to my ward in the Western Infirmary on 5th September, 1907, complaining of an unusual swelling of the abdomen.

Her general health had always been good. Menstruation began at 15, and had always been regular until April of this year. She was married two years ago, but has never been pregnant. Her last period was on 20th April. After missing two periods she naturally considered herself pregnant, but became alarmed shortly before her admission to hospital owing to the fact that the abdomen was becoming so rapidly distended. There was no morning sickness or other disturbances connected with pregnancy.

Fully two weeks before her admission to hospital, the patient was seized with a severe pain in the right iliac region; this was removed by sedatives. Since this attack of pain she has been more or less troubled with an aching sensation in the lower abdomen, and with some irritability of bowel and bladder.

The following is the patient's condition on admission to hospital, as taken from the Ward Journal:—

"The abdomen is obviously distended by a bilobed swelling. On the left side this swelling extends up underneath the ribs, but on the right it only reaches up to a little above the umbilicus. Both tumours are elastic, but while the left one is fluctuant the right is firmer in consistency. No foetal movements or heart sounds can be heard over either swelling, but a distinct uterine souffle is heard over the lower part of the right tumour.

"On bimanual examination, the swelling to the right is found to be the enlarged uterus, while that on the left is a tumour. This tumour has pushed the cervix and body of



the uterus over towards the left. The lower part of the tumour bulges down into the right fornix."

*Note by Dr. J. M. Munro Kerr.*—As far as I can judge, one has here to deal with a pregnancy of about four and a half months, complicated by a cystic tumour of the ovary. The severe attack of pain which occurred three weeks before admission seems to have been in the uterus, and not connected with any change in the circulation of the ovarian cyst.

On 9th September, an ovarian cyst, about the size of a normal sized liver, was removed from the abdomen. The patient stood the operation well. The cyst and uterus were as already described. The right uterine appendages were examined and found to be normal.

Six days after the operation patient felt foetal movements, and on the twenty-eighth day she was dismissed from hospital well, and with the pregnancy undisturbed.

*Dr. Town* had had experience of abortion after removing tumours during pregnancy.

*Dr. Lindsay* asked if tumours diagnosed during pregnancy should be removed.

*Dr. Munro Kerr* advocated the removal of ovarian cysts.

*Dr. Macfarlane* had two cases of large fibroids; in both, if pregnancy had taken place, he would have had to have them operated on.

*Dr. McLellan* asked *Dr. Munro Kerr* if he had ever dealt with these cases by vaginal section. The risk from sepsis in Cæsarean section was greatly increased where repeated examinations had been made or where there had been instrumental interference. *Dr. McLellan* thought that the pouch of Douglas should be opened first, and the tumour removed by that route if possible. If not possible, then the operation could be completed by abdominal section.

The *President* was much indebted to *Dr. Munro Kerr* for bringing forward such interesting cases; he thought that operation should be performed during pregnancy.

*Dr. Munro Kerr*, in replying, said he had operated on seven cases of tumour during pregnancy; five had gone to full term, and two had aborted. If abortion is feared, the tumour could be removed just before labour is expected. *Dr. Kerr* had removed two cystic tumours during labour by the vaginal route, but there was difficulty in ligating the pedicle.

## IV.—A CASE OF CARCINOMA OF THE MAMMA ACCOMPANIED BY PREGNANCY.

BY DR. ALEX. MACLENNAN.

Carcinoma of the mamma complicating pregnancy, or perhaps it might be more correct to say pregnancy complicating carcinoma of the mamma, is fortunately not a very common occurrence, because the age incidence of cancer and the child-bearing period do not coincide. This is fortunate, for the influence of pregnancy upon a carcinoma of the breast is most malign. The physiological activity of the breasts inaugurated by the supervention of pregnancy is, unfortunately, favourable only to the tumour growth, and does not, as might perhaps be expected, increase the resistive powers to the spread of a new growth already possessed by the tissues. The prognosis in a case of carcinoma of the mamma accompanying pregnancy is a very bad one, and in the event of such a condition being found during the course of pregnancy, I think that removal of the ovaries, as recommended by Beatson, might with advantage be performed. While saying this, I do not mean to imply that I believe oöphorectomy to be the treatment for all carcinomata of the breast, but if there be any influence on new formations in the breast possessed by the ovaries, one might expect that that influence would be active during pregnancy. The interruption of the pregnancy might also be worthy of consideration, unless, as in the case about to be reported, it had advanced already to full term. The case is the following:—

Mrs. M., æt. 40, was sent to the dispensary at the Western Infirmary last September suffering from an erosion of the nipple and a lump in the breast. Her confinement was due. Three years ago the woman had a swelling in the axilla which disappeared, and whose nature was not apparent, but according to her the swelling "fell into the breast" and constituted the present growth, which had been there for the last six months and had increased in size to a considerable extent. The nipple had been eroded for the last six weeks. The characters of the tumour were such that I had no hesitation in determining that the growth was carcinomatous. The eroded nipple was slightly indrawn and adherent to the growth situated beneath and higher up in the breast. The lump in the breast was about the size of an average apple. It was hard, but not specially so. The mass was not adherent to the chest wall, but was infiltrating the breast. It was not a defined tumour

in the mamma. Except for the nipple, the skin was healthy. There were a number of enlarged glands in the axilla. There was neither pain nor tenderness. While this state of affairs constituted sufficient evidence to pronounce the case malignant, none of the signs were so typical as to permit of only one conclusion. Tumours of the breast are proverbially difficult to diagnose, and had this feature of the matter been uppermost in the minds of those who saw this case, the prognosis might have been a very hopeful one. The patient's own doctor, when he was shown the tumour, recognised its possibilities; that was three months before the woman was seen by me. Shortly afterwards, the woman was seen by two other doctors in consultation, and was pronounced by them to be suffering from mastitis. After seeing the patient, I communicated with Dr. Kerr, who very kindly agreed to take the case into the Maternity Hospital at once, with the object, if possible, of having the breast removed before confinement. I wrote to the patient's own doctor to get him also to advise the woman to come into the Maternity at once, and this was done. Dr. Kerr asked me to operate, and the usual procedure was carried out. The glands in the axilla were extensively involved, and had to be removed from beneath the clavicle. A very wide area of skin was taken off, and, though the edges came together under tension, it was more than probable that this area would not heal. The progress of the case was uninterrupted, and healing complete with the exception of the tense area, which gave way, leaving a healthy-looking ulcer. The report upon the tumour was to the effect—"The tumour removed from your patient at the Maternity has been examined by my colleague, Dr. L. Buchanan, who pronounces it to be a carcinoma, probably of rapid growth."—(Signed) Carstairs C. Douglas.

I have never seen a recovery where the glands were so extensively involved as in this instance, but in any case the primary growth has been removed, for these tumours, when left to ulcerate, render the condition of the patient most lamentable. I report this case because the lessons to be learned from it are so important, and because the proper procedure not being followed in this instance will certainly lead to the loss of this woman's life, and as she is the mother of a large family, the mistake which has been made is most unfortunate. I hold that all lumps in the breast ought to be diagnosed with certainty, if necessary by exploratory incision or by excision of the breast where such a diagnosis cannot be made without this procedure. Were this the rule and were

this the teaching regarding tumours of the breast, such a mistake as the present would not have taken place. Instead of teaching the differential diagnosis of tumours of the breast to students who hardly know any pathology, it would be more to the point to impress upon them the truism that accurate diagnosis must precede treatment.

The *President* thought that the discussion should be referred to a future meeting, where the question of the early diagnosis of cancer was to be brought forward.

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## REVIEWS.

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*Differential Diagnosis and Treatment of Disease.* By AUGUSTUS CAILLÉ, M.D. London: Sidney Appleton. 1906.

WE have some difficulty in characterising this book by Dr. Caillé. It is not a manual of systematic medicine, nor yet a text-book of physical diagnosis; it seems rather to be between the two, and to contain an element of both. But it also includes a consideration of certain surgical affections and of several of the specialties, as well as the treatment of disease. It is, in brief, a somewhat rapid survey of the whole range of the healing art, from the point of view of differential diagnosis. "To bring the broad domain of practical medicine fairly within the grasp of the family physician, and to assist the advanced student in acquiring a clinical foundation has been my aim." So says the author in his preface. And again, "The general practitioner, representing the unity and connection of the various branches of medical practice, must grasp the practical details of his art in order to be useful at the bedside; and a book to be of value to the family physician should convey clinical experience without exhaustive and often purely theoretical details to be found and sought for in monographs." But a little of this "theoretical detail" seems to us essential if the practitioner is to appreciate and benefit by the "clinical experience." A book on diagnosis should explain, or at least attempt to explain, the meaning of the various symptoms and signs, if the reader is to have an intelligent understanding as to how the diagnosis is arrived at; and without

this, how is he to deal with the cases differing from the type described? In this respect we feel the book is deficient, making the discussion of each disease as it appears little more than a catalogue of certain signs and symptoms.

There seems, too, a lack of proportion in the space devoted to various subjects. For instance, a couple of pages are given to the iodine reaction in white blood corpuscles, whereas the testing for albumen in urine is dismissed in seven or eight lines, and "malarial parasites" in seventeen lines. Two tests for albumen are mentioned, viz., (1) "Heat and nitric acid test," and (2) "Picric acid test." Some of the space spent on the iodine reaction in blood might with great advantage have been given to discussing the fallacies incident to the "heat and nitric acid test" for albumen.

But the work has many merits, especially in regard to some of the sections on treatment. It is also well and freely illustrated "with two hundred and twenty-eight illustrations," well printed and bound. But however well it may fulfil the purposes for which it was written, we cannot hope that it will find great favour with the student of scientific medicine.

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*A Manual of Normal Histology and Organography.* By CHAS. HILL, Ph.D., M.D. London: W. B. Saunders Company. 1906.

THERE is much to be said in favour of a small volume of convenient shape which, within the limits of 400 pages, gives such a wealth of detail. The author has included so much of the development of the various organs and tissues that the word embryology might well have been included in the title. It will be evident that no space has been wasted on unnecessary verbosity, and it may be doubted whether the condensation of material has not been carried too far in a book designed for students. The preface indicates that "this manual is written in the interests of elementary students," and it will be of service to them when supplemented by lectures or a course of laboratory work. It will be of most use to teachers in charge of practical classes, and to students revising their work for examination purposes. Its terminology, a few definitions, and some descriptions show a need of revision, as will be evident from the following extracts:—"Following fertilisation the ovum multiplies rapidly by mitosis" (p. 31), and the word mitosis is explained for the first time in a special paragraph

eight pages later. On p. 58 we are told that "A follicular gland is one that is made up of follicles such as the thyroid gland." The spelling of many words differs from our practice in this country, but we demur to the use of the words "chondroma" (p. 69) and "osteoma" (p. 77) in the plural sense. The size of the trachea is described (p. 226) thus:—"It is smallest at its commencement, and, although quite uniform in its dimensions, is usually a little wider midway between its two ends."

Notwithstanding these and like blemishes, the book contains many excellent chapters, that on the structure and development of teeth being specially noteworthy. An important section, for practical purposes, is that which prefaces the first chapter, and consists of instructions and formulæ for the preparation of tissues. The laboratory directions at the end of the book, with formulæ for different methods for staining, are also eminently useful. The index extends to 14 pages and is reasonably full.

The illustrations, about 300 in number, are well suited to the text. The type is good and well set, and the flexible binding adds to the appearance and usefulness of the volume.

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*The Evolution of Life.* By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. London: Methuen & Co. 1907.

OF his biological studies, this last exemplifies best Dr. Bastian's lucid and polished style of didactic composition. The title of the book, however, is scarcely descriptive of its contents. Dr. Bastian does not believe that life is evolved, at least in the sense that the word evolution in this connection is usually used. Supposing that Dr. Bastian's ground for dissent at the present-day notions of evolution and the origin of life was well founded, his recriminations upon the manner in which his opponents have handled both himself and his doctrines will not accrue to his advantage. Far worse persecutions than his in the scientific sphere have been sustained, perhaps joyfully, at least without recrimination, and by those whose opportunities of ventilating their views were far from being nearly so advantageous as in his case. In any case, were Dr. Bastian's views correct, his evidence and logic is by no means so cogent to the reader as seems his own confidence in them. If life comes into existence *de novo* at the present time, to be thorough, Dr. Bastian should show how the

elements are combined from the beginning—providing the formula for the menstrum in which the spontaneous incubation takes place, and if it is as simple as he represents it, in such a way as to be easily demonstrable in technical schools and colleges. It seems curious that while Dr. Bastian is asserting that life is continuously even at present coming into existence *de novo*, the real worry that other biologists have is the formation of a true conception and logical argument for the dawn of life even with the countless ages at their disposal. There are even those who believe that those organic units that we call living beings are possessed of genealogical antecedents which, for want of a better expression, is external. They consider that this assumption is so self-evident, that it is more likely that the astronomical hypothesis that the surface of the earth was at one time absolutely incompatible with these organic beings, is more likely to be erroneous than that organisation as such sprung out of an organised matter.

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*Vagino-Peritoneal Operations.* By E. WERTHEIM and TH. MICHOLITSCH. Translated into English by CUTHBERT LOCKYER, M.D., B.S., M.R.C.P.Lond., F.R.C.S.Eng. With 138 Illustrations. London: Macmillan & Co., Limited. 1907.

DR. CUTHBERT LOCKYER has succeeded admirably in his translation of this work, and English readers will agree with the opening sentence of his preface that he is "supplying a distinct want." The work is really an atlas, and can be cordially recommended to those of our readers who practise gynæcological surgery. It should be in the hands of every young gynæcologist, to whom it will specially appeal, while even the experienced operator will find something to learn from its pages. Teachers of gynæcology will also appreciate it as being of great assistance in enabling them to illustrate the vaginal operations they seek to describe to their students in the lecture-room.

The 138 photographs, forming the main bulk of the book, are so excellent and so clearly illustrate each operation step by step that the accompanying text is almost superfluous.

The inexperienced surgeon in operations *per vaginam* must, however, be warned against supposing that the uterus and appendages can be brought as easily into view as some of the illustrations would seem to infer. The authors, in employing

the camera to illustrate the various operations, made use of the cadaver, and split the symphysis pubis "to obtain sufficient vaginal dilatation to render the whole field accessible to photography."

The book is divided into two sections. Part I details the steps for opening into the peritoneal cavity by anterior or posterior colpotomy, and shows the methods for bringing the corpus uteri or adnexa into the vagina. Part II illustrates step by step practically every operation which it is possible to perform *per vaginam*.

We welcome the work as a valuable addition to the books on gynæcological surgery.

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*Clinical Lectures on Neurasthenia.* By THOMAS D. SAVILL, M.D.Lond. Third (Revised and Enlarged) Edition. London: Henry J. Glaiser. 1906.

IN the new edition of these clinical lectures, a number of changes have been made, though the general plan of the work has been retained. Dr. Savill lays considerable emphasis on the part played by auto-intoxication in the etiology of neurasthenia, and he thinks that about 80 per cent of a large number of private cases which he analysed could be put down to this cause. The experience of different observers will no doubt vary a good deal, but there are probably others besides the present writer who will think that traumatic neurasthenia scarcely gets its fair share of attention in this volume. Nevertheless this is an able and interesting work, which deserves to have a wide circulation among the medical profession.

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*The British Pharmaceutical Codex: An Imperial Dispensatory for the Use of Medical Practitioners and Pharmacists.* By authority of the Council of the Pharmaceutical Society of Great Britain. London, 1907.

THIS is a most colossal volume, quite encyclopædic and up to date in character, and should be a valuable and useful, if at times rather perplexing, *vade mecum* to the pharmacists of the day.

In such a comprehensive compilation of industry (which, however, frequently sins by indiscriminately giving undue space to trifles), mistakes were perhaps inevitable, but it is



nevertheless unfortunate that it should have been issued with such a long list of "corrigenda."

To the middle-aged practitioner, or the old-fashioned pharmacist even, the new-fangled names for many well-known and familiar remedies must be considerably bewildering.

The therapeutics of the volume, though declared to be in competent hands, are likely to be regarded by the general practitioner as somewhat unsatisfactory while conceding that the *ex cathedra* statements therein contained are more than sufficient for those whose business it is not to prescribe, but compound the prescriptions of others.

The book is well printed on good paper, and is, doubtless, an important addition to pharmacopœia literature.

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*Manual of Pharmacology.* By WALTER E. DIXON, M.A., M.D. London: Edward Arnold. 1906.

It is with great interest that the reader will peruse this *Manual of Pharmacology*, which is one of the most instructive treatises of the science that we have come across. There are introductory chapters defining the various terms used, describing the ultimate action of drugs on the tissues and treating of the many conditions modifying the action of drugs, immunity, &c., &c. The greater part of the book, however, is devoted to the discussion of the different drugs, which are arranged in groups according to their action. These pages are exceedingly interesting, and abound with the results of numerous experiments made by the author himself, and are well illustrated by means of diagrams and tracings. No student of medicine could study this volume without obtaining a higher and more rational appreciation of the medicinal treatment of his patients. In short, the work abounds with personal and first-hand knowledge, and we have no hesitation in predicting for it a great future.

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*Kimpton's Pocket Medical Formulary.* By E. QUIN THORNTON, M.D. New (Seventh) Edition, Revised. London: Henry Kimpton. 1906.

THERE is hardly any branch of medicine which advances more rapidly than therapy, and the appearance of the seventh

edition of this work needs no apology. The *Formulary* has been brought up to date, and conforms to the United States Pharmacopœia. The task of revision has been carefully performed. We observe that 123 drugs, preparations, and chemicals have been added to the official materia medica, and that there have been 106 changes in strength and 139 changes in Latin titles. The diseases are arranged alphabetically, and the indications and annotations as to the use of each formula will be found very convenient. The table of poisons and antidotes is concisely drawn up. The work may be regarded as a summary of the best therapeutics of the day, but in the treatment of typhoid fever we find no mention made of the administration of citric acid or lemons as a prophylactic measure against thrombosis, nor is calcium chloride referred to in the treatment of gastric ulcer.

This handbook of 287 pages is neatly bound; and, in keeping with the aim of the author, the subject is condensed without impairing clearness of style. We confidently recommend it to the profession, and especially to the young physician.

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*Prevalent Diseases of the Eye.* By SAMUEL THEOBALD, M.D.  
London: W. B. Saunders & Co. 1906.

It will be seen from the title that this substantial volume of 551 pages is not a text-book of the usual type. It is not a complete treatise, and leaves many important aspects of ophthalmology almost untouched. Operative procedures, errors of refraction, the ophthalmoscopic affections of the fundus in their relationship to medical diagnosis, and the cerebral disorders of vision in relation to cerebral localisation, are amongst the subjects which receive but scant attention. This, however, is the deliberate purpose of the author, who states on the title-page that his book is especially adapted to the needs of the general practitioner and the medical student, and he therefore concentrates his attention on those aspects of ophthalmology which he considers of greatest importance to the practitioner. The external diseases of the eye and its appendages are therefore described with considerable detail, and special attention is bestowed on treatment. There are two admirable chapters at the beginning of the book which can be highly commended—the first, on methods of examining the eye available to the general practitioner, and, the second, on general observations upon the treatment of diseases of

the eye. In the matter of treatment the author is thoroughly up to date, and the most recent remedies, such as argyrol, dionine, adrenalin, holocaine, and eupthalmin, are included in his armamentarium. The book is written in a clear and agreeable style, and it is well illustrated with 219 figures and 10 coloured plates. The author certainly accomplishes his purpose of furnishing to the general practitioner a clear and readable book on the prevalent diseases of the eye, which can be recommended as a safe and reliable guide.

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*Retinoscopy in the Determination of Refraction at One Meter Distance with the Plane Mirror.* By JAMES THORINGTON, A.M., M.D. London: Rebman, Ltd. 1906.

THIS little *brochure* of 63 pages gives a very clear account of the practical details of retinoscopy, a method which may be regarded as practically indispensable in dealing with errors of refraction in a scientific way. The book is eminently practical, and is not overburdened with theoretical considerations. It is therefore an excellent guide to anyone who wishes to have a working knowledge of this method of measuring refractive errors. There are 54 illustrations, which elucidate the text and make the method more easily understood. Dr. Thorington believes in having the light close to the observer's eye, instead of the old method of having it above or at the side of the patient's head. He does not make clear, however, the special advantages of this procedure, and, in the opinion of the writer, the old method of placing the light has distinct advantages.

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*The Bacteriological Examination of Water Supplies.* By W. C. SAVAGE, B.Sc., M.D.Lond., D.P.H. London: H. K. Lewis. 1906.

THE importance of bacteriological examination of water supplies is now admitted on all hands, although the author in his preface claims rather more for this method of examination than can in fairness be admitted. Indeed, the author himself admits (also in the preface) that "on not a few

questions—some of which are of much importance—each bacteriologist is, at present, a law unto himself." The difficulties attendant upon the separation of the members of the coli group, and the significance to be attached to the presence of aberrant coli-like organisms, require prolonged and minute investigation before there can be general agreement as to these and other points of at least equal importance.

As an indication of our present position with regard to bacteriological examination of water, the present work of Dr. Savage is invaluable. The greater part of the book is taken up with the historical part of the subject, and an outline of the various researches into the whole question of the possibilities of bacteriological contamination of water from excreta, soil, and sewage.

Part II deals with the actual examination of water bacteriologically. Perhaps the most interesting chapter is Chapter XV, dealing, as it does, with the isolation of the typhoid bacillus from water. The difficulties here are very great, and are well indicated. The identification, as Dr. Savage points out, naturally divides itself into three stages, viz. :—

1. Preliminary methods, whereby any typhoid bacilli present are obtained in a quantity of fluid small enough to be directly plated.

2. The isolation of the organism in pure culture.

3. The tests necessary to establish its complete identity.

The various media employed are described, and the special value in this connection of Drigalski and Conradi's medium, originally intended for the isolation of the bacillus from excreta, is emphasised. Endo's method, by the employment of fuchsin-agar, is another method which, when carefully carried out, seems to yield results as definite as they are conclusive.

A very useful appendix gives a short summary of procedure recommended for bacteriological examination of a water sample, with some valuable notes on reaction indicators. A very important part of the appendix is that dealing with the reaction standardisation of media, employing Eyre's scale as a comparison.

A synopsis of recent bibliography on the subject follows the appendix.

Dr. Savage's book will be found of great value at the present time, owing to the almost chaotic condition into which the bacteriological examination of water has fallen, with the

result that, of the innumerable methods employed, it is very difficult to find out the actual value in practice of more than a very few.

There are a few useful tables, but the illustrations are scanty and of no special value.

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*The Public Health Acts, and other Sanitary Laws and Regulations.* By MARTIN ELLIOTT, Barrister-at-Law, and GILBERT ELLIOTT, M.R.C.S. Eng., D.P.H. Lond. Second Edition. London: H. K. Lewis. 1907.

THE first edition of this book, published in 1906, was reviewed in these pages only a few months ago, and that a second edition has been called for in such a short time is in itself a tribute to its usefulness. The only change in the second edition is the incorporation of the main provisions of the Public Health (London) Act, 1891, in an additional chapter of twenty-four pages. This adds to the value of the book, more particularly to those who are concerned in the working of sanitary administration in the Metropolitan area.

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*Degeneration in Families.* Translated from the Danish of FR. LANGE, M.D., by C. CHR. SONNE. London: Henry Kimpton. 1907.

THIS title suggests a very big subject, and it is no discredit to the author that the two hundred small pages here reproduced scarcely permit of even an approximation to exhaustive treatment of the subject. True, the author confines himself to "Observations in a Lunatic Asylum," apparently that in which he is superintendent, but in this very point is the weakness of the treatment exposed. There is no attempt at division of the book into chapters or otherwise, while the paragraphs sometimes exceed seven pages in length. Further, there is no summary, conclusions, or index. Apart from these omissions, however, the book will be read with a certain amount of interest by all alienists in this country, as indicating the trend of opinion on the important question of degeneration and its connection with insanity.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

## M E D I C I N E.

**Case of Mixed-Celled Leukæmia.** By W. W. Cadbury and W. T. Cummins (*University of Penn. Med. Bull.*, October, 1907).—The patient was a farmer, aged 56. For two years he had been much run down, and suffered from a cough. During the summer of 1906 he consulted a doctor who told him his spleen was enlarged. Since June, 1906, there had been marked œdema of the hands and feet.

When admitted to hospital on 7th September, 1906, there was œdema of both legs and of the left arm and hand. The spleen was greatly enlarged, extending 2 inches below the level of the umbilicus. The supraclavicular glands, especially on the left side, were also greatly enlarged, and most of the other superficial glands were larger than normal. There was evidence of a tuberculous lesion in the upper lobe of the right lung.

From 20th September to 11th October the blood was examined on six different occasions. The red corpuscles during those times averaged about 3,000,000 per c.mm., and the hæmoglobin ranged from 50 to 60 per cent; the white corpuscles varied between 156,000 and 250,000 per c.mm. Of these, the polynuclears varied from 62·3 to 47 per cent, the small lymphocytes from 12·6 to 20·4 per cent, the large lymphocytes from 3·3 to 7·6 per cent, and the marrow cells from 11·5 to 18·4 per cent.

The patient left hospital on 12th October, and as regards the further progress of the disease little is known, except that he gradually became weaker and the dropsy increased. He died on 17th November, 1906.

At the *post-mortem* examination there was generalised œdema of all the subcutaneous tissues, with considerable fluid in the abdominal and left pleural cavities. The spleen was greatly enlarged, weighing over 40 oz.; the liver was only slightly enlarged. The mediastinal, bronchial, and mesenteric, as well as all the superficial, glands were greatly enlarged. There was a fibroid and caseous tuberculosis of the right lung; the left was emphysematous.

On microscopic examination there was found to be a dense infiltration of the subpericardial tissue with leucocytes, mostly lymphocytes, though there were also a few polymorphonuclears. There was a similar infiltration throughout the liver, being most pronounced in the interlobular areas. The eosinophile cells here were very numerous, but there were also lymphocytes and polynuclear cells. The cortex of the kidneys was affected in a like manner, the prevailing cell being the lymphocyte. The spleen showed a diffuse lymphoid hyperplasia, but eosinophile cells were present in large numbers, together with a few polymorphonuclears. The lymphatic glands presented the same diffuse lymphoid hyperplasia. The bone-marrow seems to have consisted chiefly of cells with granular plasma, and red corpuscles.

—W. K. HUNTER.

**Case of Generalised Sarcoma, with Blood Changes.** By F. G. Bushnell (*Bristol Med.-Chir. Jour.*, December, 1907).—The patient was a girl, aged 21. She took ill suddenly with sickness and vomiting three weeks previous to admission to hospital. On admission there was considerable anæmia, with enlarged glands in the neck and axillæ. The spleen extended to the costal margin and the liver to half an inch lower than this. There was a general tenseness of the abdomen, with a tumour mass in the

pelvis. The breasts were tense, hard, and nodular. There were purpuric spots on the arms and legs. Examination of the blood showed the red cells to number 2,960,000 and the white cells 13,400; the hæmoglobin was 50 per cent. There was a marked relative lymphocytosis, the following being the proportions of the various white cells:—Polynuclears, 13 per cent; large lymphocytes, 37·3 per cent; small lymphocytes, 29·1 per cent; transitionals, 12·6 per cent; myelocytes, 3·4 per cent; eosinophiles, 1 per cent; large hyaline, 2·1 per cent.

The patient died three days after admission, and at the *post-mortem* there were found sarcomatous growths involving both ovaries, the retroperitoneal glands, mesentery, omentum, portal fissure, liver, and breasts. The rib-marrow was fatty.

The relative lymphocytosis of the large cell type in this case suggests a relationship with lymphatic leukaemia, and would seem to support the view taken by Banti, that lymphatic leukaemia is a true tumour development, a sarcomatosis of lymphatic elements.—W. K. HUNTER.

**Case of Chronic Splenomegalic Polycythæmia.** By L. G. I. Mackey (*Birm. Med. Rev.*, September, 1907).—The patient was a fairly well developed man, aged 51. He had been in perfectly good health until June, 1904, when he had a severe attack of influenza which laid him off work for six weeks. Ten days after starting work he was seized, while walking in the street, with a tingling and stiffness in his left leg so that he could scarcely walk home. He went to bed, and the leg became greatly swollen and painful. It remained in this state for six weeks, when the other leg became affected in a similar manner. The swelling in the legs subsided a few weeks later. He was admitted to hospital in February, 1905, when it was noted that there was a universal congestion of the skin, and that the tongue was blue. The heart and lungs were normal, and the urine contained no albumen. The veins of the legs were greatly distended. There was a good deal of pain in the legs, and walking was difficult. The condition at this time was regarded as thrombosis of the inferior vena cava following influenza.

The patient was dismissed from hospital at the end of a month's residence, but he was never well enough to do any work, and a year later he was re-admitted with swelling and weakness of the legs. The cyanosis was now more marked, the liver and spleen were both enlarged, and the red blood corpuscles numbered over 8,000,000 per c.mm.

A year later (30th March, 1907) he still had the weakness in the legs. His face, ears, and nose at this time were noted to be of a darkish red colour, but not quite of the cyanotic hue met with in congenital heart disease. The skin of the rest of the body was bluish red in colour, the feet and legs being almost purple, while the hands were only slightly tinted. The veins of the skin were prominent and distended, especially in the lower limbs. The mucous membranes were also dark blue in colour. At this time there was no œdema. There was no history of vomiting of blood or of blood in the motions. The liver was greatly enlarged, its lower edge being at the level of the umbilicus. The spleen was correspondingly enlarged, reaching below the umbilicus. For the past two years there had been a steady increase in the size of the liver and spleen, for at the beginning of that time the spleen was not palpable and the liver only extended to one inch below the costal margin. The heart had likewise increased in area, the apex impulse being one inch outside the nipple line, and the right border half an inch to the right of the sternum. The heart sounds were most often free from murmur. The pulse averaged about 76, and the blood-pressure ranged from 140 to 170 mm. Hg. The lungs were normal.

The blood was examined ten times from March, 1906, to March, 1907. The red corpuscles varied from 7,120,000 to 9,600,000 per c.mm., and the white cells from 7,000 to 13,000. The hæmoglobin ranged from 160 to 175 per cent. A differential count of the white cells showed no abnormality, and there were no poikilocytes or nucleated corpuscles amongst the reds.

The patient had been treated by a variety of drugs, such as arsenic,

quinine, digitalis, iodide of potassium, adrenalin, thyroid gland, erythrol tetra-nitrate, but with no apparent improvement, at least in the way of lessening the cyanosis, the number of the red corpuscles, or the size of the liver and spleen.

In discussing this case, the author gives a synopsis of 46 similar cases which he has gathered from medical literature. Of these, 15 died, and the *post-mortem* appearances are described in 13 of them. The spleen in all showed the blood spaces dilated and engorged with blood corpuscles. The liver was likewise greatly engorged with blood. In 8 of the cases the bone-marrow was examined, and in 7 the fat in the shafts of the long bones was replaced by an active erythroblastic tissue. In the eighth case the marrow was not examined microscopically, but it seemed normal to the naked eye. The symptomatology of the condition is also discussed in some detail, as well as its pathogenesis. In this connection Saundby's views are quoted. He "regards the primary condition as a cerebro-spinal neurasthenia, causing vasomotor spasm, with engorgement of the capillary and venous circulation and congestion of the internal organs, especially the liver and spleen, due probably to the toxins of influenza or other infections. He believes that the vasomotor spasm causes at first a generalised asphyxia of the skin, which ultimately stimulates the bone-marrow to abnormal activity, and thus increases the number of red cells, which, by increasing the viscosity and specific gravity of the blood, still further hampers the circulation, and establishes a vicious circle whereby the existing conditions are aggravated and perpetuated."

—W. K. HUNTER.

**A Case of Acquired Dextrocardia associated with Advanced Phthisis.** By J. Herbert Young, M.D., Boston (*Boston Med. and Surg. Jour.*, 12th December, 1907).—The case was considered unique in so far that, during the transposition of the heart from left to right, it was constantly under observation. The displacement took place gradually, and became more marked as signs of cavity were elicited at the right apex. The altered position of the heart gave rise to no symptoms.

The patient was a girl, aged 9 years, and was admitted to hospital on 4th December, 1906. At that date the physical signs were as follows:—Cardiac impulse in fifth space, 7 cm. to left of middle line. By percussion the left border of heart corresponded. Sounds normal. Lungs: diminished movement on right side. Right front, and from apex to midscapula behind, dull to percussion. Bronchial breathing at right apex behind. Scattered dry râles in front and moist râles behind. Left lung normal.

25th February, 1907.—Heart: visible pulsation second, third, and fourth spaces at right margin of sternum. Apex beat 4.5 cm. to left of middle line. Right border 5.5 cm. to right of middle line. Lungs: bronchial breathing over upper half right front.

22nd April.—Heart: Pulsation first, second, and third spaces in right parasternal line. Apex beat best felt third space, 6 cm. to right of middle line. Normal area of dullness resonant. Lungs: Amphoric breathing and voice sounds above right clavicle in outer half of first, second, and third right spaces. Bronchial to amphoric breathing at right apex behind.

7th June.—Heart: Cardiac impulse best felt in third space, 7 cm. to right of midsternum. Upper border at second rib, left border at right margin of sternum, right border in right mammary line. Sounds regular with no murmurs. Lungs: Resonance (not tympanitic) from apex to third rib external to right mammary line, with amphoric breathing and breath sounds and "cracked pot" percussion. In the back there was dullness below lower angle of scapula, fair resonance above with bronchial to amphoric breathing.

About twenty-five cases of dextrocardia associated with chronic pulmonary tuberculosis, without the presence of air or liquid in the pleural cavities, have been reported, but only four have been seen before and after displacement. In all cases the right lung showed signs of chronic phthisis, with the left but little involved, and in two there was a cavity at the right apex.



In two cases with cavity at the left apex the heart was pulled upwards and outwards. In a third case the presence of a cavity was diagnosed (and confirmed later) from the altered position of the heart.—GEO. A. ALLAN.

**Report of a Case of Dissecting Aneurysm with Rupture of Aorta: Autopsy.** By W. E. Paul, M.D., and W. A. Brooks, M.D., Boston (*Boston Med. and Surg. Journal*, 28th November, 1907).—The patient was a merchant, aged 57 years. He had taken alcohol freely, had had specific disease twenty years ago, pneumonia ten years ago, was operated on for appendicitis three years ago, and more recently had a hernia through the operation wound. Previous to the onset of the fatal illness he had suffered from indigestion, and was feeling below par, but on the day of onset he was feeling well, and ate a lunch of oysters, crabs, apricot pie, and coffee. The seizure took place one hour after this when he was playing cards. A severe pain shot across the lumbar region of both sides and up towards the scapulae, but not towards the abdomen. It was described as a "red pain," dull, steady, and boring in character, and was accompanied by a feeling of nausea. The patient's expression was anxious. He was pale, but his pulse did not alter. He vomited as a result of drinking freely of warm water, and morphia relieved the pain sufficiently to enable him to drive home.

The condition was diagnosed as acute indigestion. While the pain had never been quite away, it became much more severe nine hours after the onset, and was dull, steady, and constant, causing the patient to groan with each breath. As no flatus had passed, and as vomiting had continued at intervals, with a pulse of 100 and evidence of shock with marked pallor, intestinal obstruction was thought of. During the next day or two his condition did not materially change. Hiccough and spells of dyspnoea were noted. Pallor continued, and pain was elicited over the descending colon. On the fourth day an "uneasy grumble" developed in the lumbar region. On the fifth day he felt well, ate a good breakfast, and took a nap after it. Later in the day when passing water he gave a piercing scream, grasped his right loin, and fell forward dead. It was then realised that a large internal hæmorrhage had been the cause of the fatal issue.

At the autopsy the peritoneal cavity was found to contain a moderate amount of free fluid blood, and the retroperitoneal tissues were swollen, black-red in colour, and infiltrated with a considerable quantity of blood-like material. The intestines were not obstructed. The right pleural cavity contained an enormous quantity of fluid blood and blood clot. At the point where the aorta passes through the diaphragm there was a ragged opening in the wall of the aorta.

On section, the aorta showed, extending along its wall as far down as the coeliac axis, a black-red coat, 2 to 3 cm. thick, which consisted of a layer of blood-clot-like material, apparently resting between the muscular wall of the aorta on the inside and a layer of adventitia on the outside. The intima showed, all along the course of the vessel, innumerable roughened plaques, fibro-calcareous in instances, and the central portions of many of them showed ragged openings which extended into the layer of blood clot and fibrin just beneath the dissected layer of adventitia. The ragged opening in the aorta was margined by arteriosclerotic tissue, and there was a ragged interruption in the continuity of the surrounding layers of adventitia, fibrin, and blood clot. The case ran its course in five days.—GEO. A. ALLAN.

**The Medical versus the Surgical Treatment of Gastric Ulcer.** By John H. Musser, M.D. (*Amer. Journ. Med. Sciences*, December, 1907).—Musser bases his paper upon an exhaustive study of 1,871 cases of gastric ulcer and 316 cases of duodenal ulcer, collected from the accumulated literature since 1897. The cases selected are only those which have been reported in full detail. Duodenal ulcer has been reserved for a future communication. In addition, a study of 586 cases has been made, based upon private communications from the members of the Association of

American Physicians. He has kept apart from the above cases, and used as control, the work of the Mayos, Robson, Moynihan, Munro, von Mikulicz, and of those who took part in the discussions of the Royal Medical and Chirurgical Society in 1906. Many other analyses of cases were utilised for comparison.

He comes to the following conclusions:—

Gastric ulcer is a medical disease. With complications and sequelæ, it is sometimes a surgical disease. If perforation occurs, it becomes a surgical affection at once. If hæmorrhage occurs acutely, it is rarely a surgical affection; if repeated and chronic, it is a surgical affection. If the ulcer is productive of perversion of secretory function alone, it remains a medical affection. Even if pyloric spasm attends the hyperacidity, it does not necessarily take the case beyond medical care. Only when motor symptoms become prominent should such patients be operated upon. Signs of obstruction, dilatation, hour-glass contraction, or adhesions indicate operation. If, in spite of medical treatment, the symptoms become continuous, and if hæmorrhage recurs and secondary anæmia arises, gastric ulcer is a surgical disease. The extraordinary frequency of chronic gastric ulcer, with sequelæ requiring operation, is due to neglect of treatment of the ulcer in its incipency.

Very proper emphasis is laid on the selection of a surgeon of experience in gastric work, and on the necessity of a continuance of medical, hygienic, and dietetic treatment after the operation.—ARCH. W. HARRINGTON.

**Studies on Arteriosclerosis, with Especial Reference to the Radial Artery.** By W. S. Thayer, M.D., and Marshal Fabyan, M.D. (*Amer. Journ. Med. Sciences*, December, 1907).—The authors have examined clinically, and microscopically after death, the radial artery in sixty-one cases. For the sake of comparison, bits of the aorta from a point just above the valves, and from a point just above the origin of the mesenteric artery, as well as a piece of the mesenteric vessel just below its point of origin, were also examined. The age of the patients varied from 56 days (in a seven months' child) to 83 years. It is clear from their researches that an elastic-muscular thickening of the intima appears in the radial artery at a relatively early age—that is, within the first decade. With growth, and the associated increase in pressure, the artery strengthens itself—in the intima by the separation of one or more fresh strands of elastica from the inner surface of the fenestrated membrane, and the appearance about these of a few connective-tissue cells and longitudinal muscle fibres; in the media and adventitia by a gradual hypertrophy and hyperplasia. At the end of the second decade, when full growth has been reached, there is little change in the thickness of the adventitia. The intima, however, tends to become slightly thicker, from the development of more elastic tissue and smooth muscle fibres, while the depth of the media shows a slight increase. Gradually, however, during the third and fourth decades, especially in individuals subjected to heavy physical strain, distinct areas of connective-tissue thickening appear in the intima; the regular elastic strands which are separated from the interna are replaced by numerous finer, more irregular fibrils, while, on the outer side of the elastica, a delicate layer of connective-tissue also appears. Opposite these areas, the elastic interna is less deeply undulating and seems somewhat stretched, while connective-tissue begins to appear between the muscle fibres of the media. The yielding tube thus fortifies itself against the increasing strain. But these changes are not marked until the fifth decade, when the artery begins to assume a very different appearance. The vessel wall now tends to stretch, and additional support is obtained by the development of firm connective-tissue in the intima, along with an increase in that upon the medial side of the interna and in lesser degree throughout the media. The vessel is usually felt then as a firm tube. Finally, in these sclerotic vessels degenerative changes set in, somewhat different from those in larger arteries. They consist of local areas of coagulation necrosis with calcification, especially marked in the deep layers of the connective-tissue thickenings of the intima,

and in the muscle fibres of the media, particularly opposite these points. These changes may go on to actual bone formation. It is thus evident that it may be often difficult to draw a sharp line between the normal and the pathological radial artery.

In the mesenteric artery, it was noted that calcification is apparently much less frequent than in the radials, and in several instances plaques were seen, with fatty softening of the deeper layers of the intima and superficial proliferation—a picture the authors have never observed in the radial.

In the aorta, the elastic-muscular intima thickens with age. The regressive changes are prone to be in the form of necrosis, with fatty change and softening, associated with active proliferation of the intima on the surface of the plaque.

The authors conclude that in old age a thickened radial artery represents conditions which are normal and are to be expected, not only in peripheral but in central vessels. An unduly thickened radial at an earlier age implies that the vessel has been subjected to unusual strain, or from inherent weakness has been unable to cope with ordinary strain. As a rule, although there are striking individual exceptions, when the thickening of a radial artery is unduly marked, similar changes occur in the intima of the mesenteric artery and aorta. The distribution of such changes is irregular, but the unduly palpable radial artery may be reasonably regarded as a signal of danger.

—ARCH. W. HARRINGTON.

## SURGERY.

**The Use of Local Anæsthesia in the Treatment of Fractures.** By Dr. Guido Lerda (*Zentralbl. f. Chirurgie*, December, 1907).—The author expresses great surprise that although local anæsthesia is now very largely employed in many surgical procedures, and although the pain caused by the reduction and fixation of a fracture is very acute, yet very little use has been made of this method of treatment. He puts forward the following objections to a general anæsthetic:—(1) The need for several assistants; (2) the struggling that usually takes place; (3) the danger of giving a general anæsthetic to an unprepared patient. Thus, one ought not to give a general anæsthetic as routine treatment.

Conway in 1885 first employed "cocaine as an anæsthetic in fractures and dislocations." Reclus recommended its use before transporting patients suffering from fractures, and Braun recommended its use in fractures of the ribs, clavicle, skull, &c. The author has employed it during the last two years on thirty cases, with great benefit to the patients. The chief point which must be attended to is the exact localisation of the site of the fracture so that the anæsthetic can be injected there. The solution ( $\frac{1}{2}$  per cent cocaine in normal salt solution) has more effect when to it is added 1 drop of 1 in 1,000 adrenalin for every c.cm., the effect of this being a marked lessening of the blood poured out between the ends of the bone and into the surrounding tissues. Five to 8 cg. of cocaine can be freely injected between the fragments, into the medulla, and underneath the periosteum and into the surrounding tissues. After an interval of from 6 to 10 minutes it is found that the fragments can be manipulated freely without pain, and that the muscular spasm has passed off, allowing one to reduce and immobilise the fracture in a very satisfactory way.

The fracture which the author has most often treated in this way is that at the lower end of the radius, but he has found it equally satisfactory in fractures of both bones of the fore-arm and of the humerus. At the elbow itself the treatment is not so satisfactory, as it is so hard to definitely localise the site of the fracture; nor is this treatment available for fractures of the femur (with the exception of fractures at the lower end of that bone). In fractures of the bones of the leg local anæsthesia is very useful, as also in fractures of the bones of the hand and foot, clavicle, ribs, nose, &c.

In conclusion, he advocates this method of treatment for wounded soldiers, enabling transport to be carried out with a great deal less pain than usual.—  
ROBERT B. CARSLAW.

**Epithelioma of the Neck arising from Branchial Remains.**  
By Robert Siegel (*Gazette des Hôpitaux*, No. 148, 26th and 28th December, 1907).—Primary carcinoma has long been noted as occurring in the neck, but till recently the explanation was unsuitable. In such cases, examination of the mouth, pharynx, œsophagus, &c., for a focus of growth, remains negative. The explanation of the occurrence of primary malignant epithelial growth from vessel sheaths or gland tissue is an impossible one, as epithelial cells are not met with there, and Veau, in 1901, was the first to refer these tumours to their proper origin—from the epithelial structures remaining from the branchial clefts. Branchial epitheliomata are usually found in the carotid region near the hyoid bone, and so are, as a rule, distinct from growths occurring in aberrant salivary gland tissue, though sometimes they are found in the sub-maxillary or parotid region. Also, the tumour differs from those in displaced thyroid or thymus tissue, in never presenting colloid spaces or concentric bodies. Branchial epithelioma usually commences about the carotid sheath, and invasion of the sheath is noted early, the jugular vein especially being involved, and often the carotid artery secondarily englobed and compressed, without actually being invaded. Thrombosis of the jugular vein is not infrequent. The lymphatic glands are rarely affected, but if so, metastasis is found in the carotid or supraclavicular glands. Males are more commonly affected than females, and growth comes on after the fortieth year.

**Symptoms.**—These are very varied in number and degree. The onset is usually insidious, but frequently the appearance of a tumour is preceded by pain, disturbance of phonation and deglutition. In some cases, a benign congenital branchial tumour has existed before malignant growth. A tumour mass appears in the neck, and this gradually increases and becomes more and more immobile, with slight local pain. About six months from its commencement, it may be of the size of an almond to that of the fist, though there is rarely any marked projection, the tumour remaining in the thickness of the tissues of the neck. In consistence, some such tumours are woody and dense, others soft and semifluctuant, or again there may be denser and softer areas alternating. Soon the skin contracts adhesions with the tumour, and a typical "orange skin" appearance is got on puckering the skin. At an early stage, the slight lateral mobility of the tumour is lost, and complete fixation is found. Functional troubles are never marked, but there may be inconstant pain radiating towards the ear or the occipital region, or difficulty in respiration, deglutition, and mastication. In spite of implication of vessels, pressure effects are not often got. The general condition remains good for a considerable time, and cachexia is comparatively late.

**Duration and course.**—Evolution is very rapid, and the duration is hardly more than eighteen months. The size increases greatly, even to that of a child's head, and skin involvement, with ulceration and hæmorrhage, may occur.

**Diagnosis.**—In commencing branchial epithelioma, goitre from aberrant thyroid tissue is excluded, as, in the latter, growth is very slow, the signs of innocent tumour persist, and the patients are usually females of a young age. Tumours of the carotid body are very rare, very slow in development, come on in younger individuals, are seated about the level of the thyroid cartilage, remain always smooth, and move freely in a transverse direction, and present often the characteristic signs of perceptible pulsation to the touch, with perceptible murmur.

Lymphosarcoma gives a voluminous tumour, hard and immobile, adherent and infiltrated, which soon causes vascular and nerve pressure.

Tubercular glands may be confused, and in some cases the only distinction is got on histological examination.

Actinomycosis is found with a sub-inflammatory appearance in the tissues,

the skin is reddened and adherent to the deep fascia, ulceration is early, and the discharge is characteristic.

Secondary carcinomatous glandular involvement is the most important and most difficult to differentiate when the primary growth is deep seated. A thorough search must be made on several occasions in the mouth, pharynx, nasal fossæ, œsophagus, stomach, and even the testicle.

*Treatment.*—Radical operation must be done, with, probably, sacrifice of the jugular vein or carotid artery, or both. Removal of portions of the vessels and nerves in the carotid sheath is not so serious in these cases as might be feared, since collateral circulation or collateral nerve-supply has been established in virtue of the gradually developing stenosis or pressure induced by the growth of the tumour before operation.—SPENCER MORT.

**Congenital Torticollis.** By A. H. Tubby (*Practitioner*, January, 1908).—A review is here given of the paper by E. H. Bradford and J. W. Sever, who advance the theory of Nové-Josseraud and Vianey. They believe that hæmatoma of the sternomastoid is not the sole cause of congenital torticollis, and advance an ischæmic explanation. The sternal head of the muscle receives normally a smaller amount of blood than that supplied to other parts of the muscle, and, with the head flexed and rotated to its usual position *in utero*, this blood-supply is diminished or cut off, from pressure on the small vessel which passes from the superior thyroid artery to supply the sternal head. This causes muscular degeneration, with subsequent sclerosis and contraction. On examination after autopsy in children affected, the muscle presents a waxy hyaline appearance, with interstitial myositis, exactly similar to that got in Volckmann's ischæmic paralysis of the limbs.—SPENCER MORT.

## PUBLIC HEALTH AND INFECTIOUS DISEASE.

**Experimental Studies relating to "Ship Beri-Beri" and Scurvy.** By Professor And. Holst, M.D., and Dr. Theodor Frölich, M.D., University of Christiania (*Journal of Hygiene*, October, 1907).—The disease here studied is loosely called beri-beri of ships, as it has only a superficial resemblance to true or tropical beri-beri. The symptoms are, chiefly, weakness and dropsy, with cardiac dilatation, and neuritis is there. It occurs almost solely among the crew of sailing-vessels, and after unusually long voyages, and therefore under such conditions as lead to deterioration in diet. It is with the object of settling this relationship that these experimental studies were commenced. The food theory is supported, not only by the general condition present when the disease appears, but also by the immediate improvement in the cases when proper food, or rather fresh food, has been able to be obtained. The disease has thus close analogies with the marasmic diseases grouped under the name scurvy.

The first paper contains results of experiments on poultry with various forms of restricted diet. There is a well-known form of disease which chickens and pigeons contract when fed exclusively on carbohydrate material—such as rice-food, barley-groats, &c.—termed polyneuritis gallinarum. This definite pathological condition is regularly produced by a diet likely to cause scorbutic symptoms in mammalia. The general result was that animals fed on tinned meat and bread of poor quality contracted the disease.

The second paper deals with similar experiments on guinea-pigs, in whom, apparently, a disease quite comparable with human scurvy can be produced by a diet such as is known to cause scurvy in the case of man. Animals fed exclusively on bread, groats, and imported grain die in about thirty days, presenting characteristic changes, both to the naked eye and microscopically. These are chiefly hæmorrhages, loosening of teeth, and softening of the bones.

From their histological studies, also, the authors conclude that these alterations are, in all essentials, wholly identical with those found in human scurvy. The course of the disease, also, is favourably influenced by various substances known as "antiscorbutics." The disease is not produced by a one-sided diet consisting of fresh cabbage and fresh potatoes, but is produced by dried potatoes.

These results seem to indicate that conditions of feeding to which the Norwegian sailors on long voyages are subjected are such as to cause serious disease, but, so far as animal experiments go, the pathological conditions found with similar diet present a much closer analogy to human scurvy than to the disease under consideration. Its precise nature and etiology are, therefore, as yet unexplained. —ALEX. MACGREGOR.

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- Tumours of the Cerebellum, by John Wyllie, M.D. London: H. K. Lewis. 1908. (4s. net.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FIVE WEEKS ENDING 22ND FEBRUARY, 1908.**

	WEEK ENDING				
	Jan. 25.	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Mean temperature, . . .	41·4°	40·2°	43·1°	44·0°	43·0°
Mean range of temperature between day and night, .	11·4°	18·9°	17·8°	5·7°	15·5°
Number of days on which rain fell, . . . . .	4	5	2	4	6
Amount of rainfall, . ins.	0·51	0·96	0·15	0·35	1·50
Deaths registered, . . .	418	394	380	377	354
Death-rates, . . . . .	25·4	23·9	23·1	22·9	21·5
Zymotic death-rates, . .	5·4	4·7	4·6	4·3	3·5
Pulmonary death-rates, .	6·1	5·6	4·9	5·4	4·6
<b>DEATHS—</b>					
Under 1 year, . . . . .	91	81	80	83	74
60 years and upwards, .	87	94	78	76	65
<b>DEATHS FROM—</b>					
Small-pox, . . . . .	...	...	...	...	...
Measles, . . . . .	70	54	55	47	34
Scarlet fever, . . . . .	2	5	2	3	3
Diphtheria, . . . . .	4	2	3	5	1
Whooping-cough, . . .	7	12	9	11	13
{ Fever, . . . . .	5	1	3	1	1
{ Cerebro-spinal fever, . .	1	3	4	4	5
Diarrhœa, . . . . .	11	7	7	11	3
Croup and laryngitis, .	...	...	...	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	101	92	80	89	76
<b>CASES REPORTED—</b>					
Small-pox, . . . . .	...	...	...	...	...
Cerebro-spinal meningitis, .	3	8	10	9	6
Diphtheria and membranous croup, . . . . .	21	25	33	29	34
Erysipelas, . . . . .	20	22	29	17	20
Scarlet fever, . . . . .	45	40	42	36	50
Typhus fever, . . . . .	...	...	...	...	...
Enteric fever, . . . . .	26	15	20	13	7
Continued fever, . . . .	...	...	...	...	...
Puerperal fever, . . . .	1	1	3	1	5
Measles.* . . . .	1287	1013	754	711	681

\* Measles not notifiable.

THE  
GLASGOW MEDICAL JOURNAL.

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No. IV. APRIL, 1908.

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ORIGINAL ARTICLES.

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THE SCHOLA SALERNITANA: ITS HISTORY AND  
THE DATE OF ITS INTRODUCTION INTO THE  
BRITISH ISLES.

*BEING THE FINLAYSON MEMORIAL LECTURE.<sup>1</sup>*

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THE foundation of a lecture in Glasgow, of which the subject should on certain occasions belong to the history of medicine, was a happy method of commemorating the studies and the tastes of Dr. James Finlayson.<sup>2</sup> In this city, where he was born and received his education, where he practised his profession, rose to distinction, and died, his character and the events of his honourable career are too well known for it to be necessary for me to dwell upon them before you.

His most valuable historical work is, in my opinion, the *Account of the Life and Workes of Maister Peter Lowe*, in which he has set forth all that can be gathered from numerous

<sup>1</sup> Delivered at Glasgow on 26th February, 1908.

<sup>2</sup> He was born 22nd November, 1840, and died 9th October, 1906.



sources about the founder of your Faculty of Physicians and Surgeons, that amiable surgeon to the King of France and Navarre—

“ Who cured many while he lived,  
 Soe gracious he noe man grieved,  
 Yea, when his physicks force oft failed,  
 His pleasant purpose then prevailed.”

The fragmentary records of Peter Lowe's life, his attainments, the nature of his practice, the contents and the several editions of his works, are set forth with very great care in this interesting book.

Dr. Finlayson gave several lectures on medical authors, under the title of bibliographical demonstrations. One was upon Herophilus, with whose torcular we all became acquainted at an early period of our medical studies, and another was on Galen.

It seems, therefore, appropriate in delivering the first lecture of a series intended to commemorate his work, to follow his example, and to choose as a subject the history, or part of the history, of a medical book rather than the history of any particular section of medical knowledge.

I suppose every man who has lived at all in what Burke calls the world of books feels a personal kindness for those books which he has known long, and which he has taken up again and again with pleasure. They become his friends, mixed up with a thousand associations of his life, and often recalling human friends, their voices, their aspect, their thoughts, their surroundings.

The *Schola Salernitana*, or *Regimen Sanitatis Salerni*, is one of the books for which I feel this friendship. I first saw it in my boyhood at Walton Hall in Yorkshire, the house of Charles Waterton, the naturalist, where an edition of 1559, printed at Maintz, stood in his room upon a rough wooden shelf beside a quarto Spanish *Don Quixote*. The furniture of the room consisted chiefly of old cabinets and chests of drawers filled with the skins of toucans, houtous, tanagers, and other birds of Demerara. Over the fire on the wall was pasted an early map of Guiana, with the fabulous Lake Parima marked very large in the middle of it. Near the window hung an old sword, which was last worn by Waterton's grandfather when he left the house to join the forces of Prince Charles Edward in 1745. The floor was bare, and Waterton slept on it every night, wrapped up in a great Spanish cloak, and with his venerable white head resting

upon a block of oak. He read a chapter of *Don Quixote* every morning early as soon as he had finished his devotions, and the Schola Salernitana which stood beside it he had read so often that he knew the greater part of it by heart, and as we walked together in his park, or sat under its trees in warm weather, or by outdoor fires in cold, he would often quote its verses to me and comment upon them. Thus began my acquaintance with the book.

It is a collection of opinions or dicta on the preservation of health, on the uses of herbs, and on the remedies for some diseases, so that it discusses what in modern phrase we should call regimen or hygiene, diet, materia medica, and therapeutics. A few examples will at once show you the way in which its subjects are treated.

Thus, the aphorism upon "Supper" is—

"Ex magna coena stomacho fit maxima poena,  
Ut sis nocte levis, sit tibi coena brevis,"

as an old English version renders it—

"Great suppers do the stomach much offend,  
Sup light if quyet you to sleepe intend."

The remarks on materia medica are well illustrated by the passage on the herb "Sage"—

"Cur moriatur homo, cui Salvia crescit in horto?  
Contra vim mortis non est medicamen in hortis.  
Salvia confortat nervos, manuumque tremorem  
Tollit, et ejus ope febris acuta fugit  
Salvia castoreumque lavendula, primula veris,  
Nasturtium, Athanasia, haec sanant paralytica membra,  
Salvia salvatrix, naturae conciliatrix."

The same old English version loses some of the terseness of the Latin—

"But who can write thy worth (O, soveraigne Sage).  
Some ask how men can die where thou dost grow.  
Oh! that there were a Medicine curing age,  
Death comes at last, tho' death come nere so slow:  
Sage strengthens the sinews, Feauers heat doth swage,  
The palsie helpes, and rids of mickle woe,  
In Latin, Saluia takes the name of Safety,  
In English, Sage is rather wise than crafty:  
Sith then the name betokens wise and saving,  
We count it nature's friend and worth the having."

A commentator, whose work was translated into English in Tudor times,<sup>1</sup> expresses the sense somewhat better:—

"Here thauctour touchyng principally four thynges sheweth the greате utilite of sage askyng as though he doubted: wherfore man dyethe, that hath sage growing in his gardeyne. He answereth in the second verse that no medycyne growyng on the gardeyne can withstande dethe, all though in the gardeyne growe medycynes that kepe the body from putrifaction and defende that natural humidite be not lyghtly consumed awaye.

"Secondly, he putteth three effectes of sage. The fyrste is, that sage conforteth the senowes for it dryeth the humidities by which the senowes be let and leused.

"The second is that it takethe awaye the shakynge of the handes by reason that it confortethe the senowes, as is sayde, nowe all thinge that conforteth ye senowes remoueth tremblyng. For tremblyng cometh of febleness of the senowes. And therfore some old men and women specially put sage leaues in their meate and drynke. Thyrdlye, sage letteth the sharpe ague to assayle us by reason that it dryethe humours, it letteth them to putrifie, wherby a sharp feuer myghte be engendred.

"Thyrdelye thauctor reherseth six medecines good for the palsey. It is sayd that sage, castorie, Lauander, Prymerose, Wattercresse, and Tanseye cure and heale membres enfect wyth palseye.

"In the ende of the texte thauctour sayth sage is called the sauer and keper of nature."

The section on "Headache" is an example of the therapeutic parts of the book—

"Si capitis dolor est ex potu lympa bibatur :  
Ex potu nimio nam febris acuta creatur.  
Si vertex capitis, vel frons aestu tribulentur,  
Tempora fronsque simul moderate saepe fricentur,  
Morella cocta nec non calidaque laventur,  
Istud enim credunt capitis prodesse dolori."

The same commentator in his sixteenth century English version says of this passage—

"Here thauctour notyng two thynges sayeth that if the headache come by to much drynkyng and specially of wyne, or of any other drynke, that maketh folkes dronken, one must drynke cold water upon it, the whiche with the

<sup>1</sup> Imprinted at London, in Paules churcheyarde at the sygne of the Lambe by Abraham Vele, Anno Domini, M.D.LVII.

coldenesse thereof ingrosseth the fumes that are lyfted up and lettethe them to hurte the brayne. The second thyng is, that if the toppe of the head or foreheadde be greued with to much heate, than the tempuls should be moderately chafed, and after washed with warme water, in the which mother worte is sodde, for mother worte is colde and coleth."

You have observed that these passages are in verse, and so is the whole book. The lines are generally hexameters, and their rhythm is further sustained by terminal or median rhymes, and by occasional assonance, so that they show considerable variety.

Thus, the lines on the dietetic qualities of the viscera of animals are without any rhyme—

"Egeritur tarde cor, concoquitur quoque dure  
Sic quoque ventriculus, tamen exteriora probantur  
Reddit lingua bonum nutrimentum medicina  
Concoctu facilis pulmo est, cito labitur ipse  
Est melius cerebrum galline, quam reliquorum."

The heart and the stomach are difficult of digestion; the tongue is wholesome and the lung easy of digestion. The brain of fowls is better than that of other creatures.

And sometimes the rhymes are two in each line, as in the verses on "Pease"—

"Pisum laudandum nunc sumpsimus, ac reprobandum.  
Est inflativum cum pellis, atque nocivum,  
Pellis ablatis, sunt bona pisa satis;

which three lines tell little more than that peas ought to be shelled.

It is hardly necessary to point out that in mediæval poems a rigid attention to the quantity of syllables is not to be expected.

The enormous increase of books due to the printing press has led to the notion that prose is the only form appropriate to the conveyance of positive knowledge, and to the belief that verse is a method of expression only suited for things of emotion or of fancy. It is easy to see that a different idea prevailed in former times.

The object of Lucretius was to set forth the natural science of Epicurus, including his explanation of the human soul. The feeling of our time would be to use verse, as Lucretius does, to make men feel that the fear of death is unreasonable, but not to use it as he does to elaborate an atomic theory or a cosmology. The poet thought verse appropriate to both as the most impressive of all forms of human expression.

Other writers chose verse because they were full of a particular subject, and desired to set it forth so that others should dwell upon the series of facts which had delighted them, with which they were familiar, and the arrangement of which they had long turned over in their minds. They are perfect in the subject, and adorn it with any really poetical thoughts of which they are capable. Falconer's "Shipwreck" is an example of this kind of poem in English, and De Thou's on the training and care of falcons in Latin.

Some men, no doubt, wrote in Latin verse on special subjects for the linguistic exercise, or because they admired the Georgics, and would imitate them; as, for example, Passeratius in his garden poems, and Philips on "Cider."

A fourth kind use verse to aid the memory. Sometimes it is the memory of ideas, as in the poems of the Sedulius mentioned by Bede, and once supposed to be Sedulius the Scot.<sup>1</sup> He wished to fix in the minds of his ecclesiastical readers the incidents of the scriptures and the way they might be used in teaching. Thus, the lines on Lot's wife recall the incident of her petrification, and supply a theologian meditating on it with a general application and an easily understood comparison—

"Loth Sodomæ fugiente chaos, dum respicit uxor  
In statuam mutata salis, stupefacta remansit,  
Ad poenam conversa suam; quia nemo retrorsum  
Noxia contempti vitans discrimina mundi,  
Respiciens salvandus erit, nec debet arator  
Dignum opus exercens, vultum in sua terga referre."

Another variety of verse-writers desired to fix in the memory useful statements of fact, and of these the "Regimen Sanitatis Salerni" is a conspicuous example.

A medical poem will not seem unfamiliar to you. Scotland has several medical poets. Dr. Armstrong, the most famous, wrote in English on the art of preserving health. Dr. Arthur Jonston wrote a poem on an anatomical lecture at Padua, and Robert Ayton one on Raphael Thorius, the physician, who died of the plague in London in 1622. Scotland's chief Latin medical poet is certainly David Kynaloch, born in 1560, whose poems, in two books, on the development, anatomy, and internal diseases of man,<sup>2</sup> were printed at

<sup>1</sup> *Coelii Sedulii Scoti Poemata Sacra*, Edinburgh, 1701. It is now generally received that these poems were not written by Sedulius the Irishman, but by the Sedulius mentioned by St. Isidore of Seville.

<sup>2</sup> *De hominis procreatione anatome ac morbis internis*.

Paris in 1596. As his poem has never been reprinted since the publication of the *Delitiæ Poetarum Scotorum* by Arthur Jonston in 1637, and as he does not seem to have received his due measure of fame, and as we are considering a metrical work on medicine, it may not be improper to say something of Kynaloch.

That he practised his profession in France seems certain from the commendatory verses prefixed to his poems, one by a French royal physician, two others by French doctors of medicine, and the others by senators of the supreme court of Brittany, by Sir Louis d'Epinay, Marquis of Vaucouleur, and other Frenchmen. That he was a loyal subject of James VI is shown by the lines in his first book, in which he apostrophises that monarch—

“Tuque adeo Arctoïis qui sydere clarius omni  
Præluces virtute tua regionibus, aureum  
Sexte jubar mundi, cujus generosa tumultus  
Invictæ toties sedarunt pectora gentis  
Scotorum,”

and that he was proud of his native country and of the achievements of his countrymen in arms and in literature is shown by his declaration that no other race could equal them in spirit or in battle, and that the ancient Romans, when they had subjugated most of the world, were routed in Scotland.<sup>1</sup>

Kynaloch had worked at morbid anatomy and had sought out in autopsies the explanation of obscure diseases

“quæ sola cadavera sæpe fideli  
Artificis scrutanda manu, resecandaque monstrant.”

He was accustomed to clinical observation, and examined the hepatic region with his hand, for in the part on diseases of the liver he says,

“Pars cætera durum  
Producit scirrhum qui sæpe prementibus extra  
Obsistit digitis.”

He perhaps practised in Brittany, as he begins his second book by an epigram addressed “Ad amplissimum Galliæ Armoricæ senatum” (To the Parliament of Brittany).

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<sup>1</sup> “Cui nulla animis æquanda nec armis  
Altera, quam toties Romana potentia, totum  
Imperio et duris premeret dum legibus orbem,  
Subdere nixa, gravi semper subverſæ ruina  
Corruit.”

I have been able to discover little more of his life<sup>1</sup> than is shown by these few passages in his works, and so learned an author and fellow-countryman as Dr. James Douglas does not even mention him in the *Bibliographiæ Anatomicæ Specimen*,<sup>2</sup> a work which generally supplies to the enquirer what he seeks in it.

The second book of the poem is the more interesting, and gives in its eleven chapters a summary of the knowledge of its time in anatomy and morbid anatomy.

The chapter on the chest and the parts therein contained and their diseases shows the narrow extent of knowledge of the heart then prevailing, and the entire absence of knowledge of its diseases.

“Sistitur in mediis cor, acuta cuspidē lævum  
Ad latus oblique tendens, pericardion extra  
Investit, tepidoque rigans temperat imbre  
Fervidulum : geminæ cavitates : dextera venam  
Acceptatque cavam, ramumque in utrumque refundit  
Pulmonis latus insignem, quo sanguine totum  
Nutriat : e læva duplex arteria prodit :  
Altera pulmoni sanguen vitale ministrat  
Multiplici teneram percurrrens germine carnem,  
Altera, quæ princeps medicis et magna vocatur,  
Promit et educit vitam cum sanguine, totum  
Humanæ molis radiis vitalibus orbem  
Illustrans.”

The heart has two cavities (the auricles were not then regarded as cavities of the heart itself): the right receives the vena cava and by large branches to each lung nourishes it. From the left side of the heart two arteries are given off, one to the lung, while the other carries the vital spirit with the blood illuminating the whole world of the human frame with vital rays.

How remote from fact is the account! Thirty-two years later Harvey's book made the true structure of the heart and the true function of its several parts clear to every student.

It now seems to us difficult to believe that the old view could have had any adherents, difficult to understand how men could have failed to see what was so plain before them. It is a fine remark of Bichat that nothing is so plain as the

<sup>1</sup> James VI created his estate of Aberloathrie, with other lands, a barony in a charter granted in 1616 to Dr. David Kinloch, as I have learned from Dr. Steele, of Florence.

<sup>2</sup> London, 1715.

discovery of yesterday, nothing so difficult as the discovery of to-morrow.

Kynaloch has not one line on the diseases of the heart. None were known in his time, and it is a remarkable example of the often slow effect of a great discovery that few traces are to be found of acquaintance with those diseases, the perception of which would seem a natural consequence of the knowledge of the apparatus and course of the circulation, till a century after Harvey's demonstration. In the writings of Mead, and even in Van Swieten's edition and commentary on the Aphorisms of Boerhaave, published in 1764, there is scarcely any information on diseases of the heart.

The chapters of Kynaloch's book on internal diseases treat respectively of the brain, the eye, the ear, the nose and palate, the mouth, tongue and fauces, the thorax and its contents, the alimentary canal, the liver and spleen, the kidneys, and the generative system in each sex. After describing the brain and nerves, he mentions many nervous diseases and nervous symptoms—headache, hemicrania, scotomia, incubus, epilepsy, spasm, opisthotonos, tetanus, trismus, apoplexy, paralysis, lethargy and disorders of the mind, and this is the longest of his chapters. They leave the reader impressed by his powers of expression, his somewhat dogmatic method of statement, and his acquaintance with the knowledge of his time in medicine.

But I have only mentioned David Kynaloch to remind you that medicine in Latin verse is part of your literary inheritance in Scotland, and I must return to the Schola Salernitana.

So far as it is a poem, it belongs, as I have already mentioned, to the last, and from the poetic point of view, the lowest variety of writing on physical subjects in verse: that variety in which the writers desired to fix in the memory for practical use various statements of fact.

The Schola Salernitana varies in its manuscript copies. One early recension contains 500 lines. De Renzi collected 3,526 lines which he believed to belong to it, and there are codices and printed editions with intermediate numbers of lines. I shall have to refer to these variations later, and for the purpose of setting before you a general notion of its contents I shall take the printed edition of Dr. Zacharias Sylvius of Rotterdam, of 1667, which contains 372 lines.

A dedication to a king of England begins the work, and is succeeded by verses under somewhat more than a hundred headings. Of these sections—three are on general rules of life, such as to wash the hands with cold water on rising,



to avoid mid-day sleep, and abdominal distension and heavy supper.

Thirty-four sections are on diet, and various kinds of food, beginning with the sensible recommendation,

“Never eat unless the stomach is empty.”

The sick are to avoid certain foods,

“Persica poma pyra et lac, caseus et caro salsa  
Et caro cervina et leporina, bovina, caprina :  
Atra haec bile nocent, suntque infirmis inimica,”

such as peaches, apples, pears, and milk, cheese, and salt meat, venison, hare, beef, and goat. You will remember that some of the chroniclers attribute the death of King John to a meal of peaches and ale: an example of the prevalence of the prejudice shown in these verses.

Certain other articles of food are commended—

“Ova recentia, vina rubentia, pinguia jura,  
Cum similia pura, naturæ sunt valitura.”

New-laid eggs, red wine, and rich broth are good food. Bread and cheese are recommended—

“Caseus et panis sunt optima fercula sanis.  
Si non sunt sani, tunc hunc ne jungito pani.”

Nine sections are on wines and beer and drinking. The remedies for poison—

“Allia, ruta, pyra et raphanus cum Theriaca nux,  
Praestant antidotum contra lethale venenum.”

Leeks, rue, pears, and radishes and the theriac nut do not seem efficacious, but it must be remembered that the middle ages knew little of poisons, and that the deaths mentioned in the chronicles as due to poison are for the most part natural.

The number of diseases mentioned is small: two sections on affections of the eyes, two on the ears, toothache, sea-sickness, hoarseness, headache, colds, and fistula make up the list.

Twenty-one sections on bleeding show how important a therapeutic agent venesection was considered to be.

There are sections on the seasons, the humours of the body, and on the four temperaments, and on the importance of pure air.

The rest of the verses are on herbs. I have already quoted the enthusiastic lines on sage. Anise is commended,

“Emendat visum, stomachum confortat Anisum  
Copia dulcoris, Anisa sit melioris.”

It clears the sight and comforts the stomach. Mint is recommended as a vermifuge,

“Mentitur mentha, si sit depellere lenta,  
Ventris lumbricos, stomachi vermesque nocivos.”

Violet, which in our time has been praised as a remedy for cancer, has had, and lost, at least one other therapeutic reputation since the time of the Schola Salernitana: it was a remedy for drunkenness, headache, and oppression of spirits, and for epilepsy.

“Crapula discutitur, capitis dolor, atque gravedo  
Purpuream Violam dicunt curare caducos.”

The reputation of drugs has often rested on no more secure foundation than that improvement of the patient's state has been now and then observed to follow their administration.

The nettle has long lost its mediæval reputation in rheumatism—

“Frigus pulmonis pellit, ventrisque tumorem  
Omnibus et morbis ea subvenit articulorum.”

Mustard cleared the head and was one of the remedies for poison:

“Est modicum granum, siccum calidumque sinapi  
Dat lachrymas, purgatque caput, tollitque venenum.”

The use of colchicum in gout seems indicated by the lines

“Confortare crocum dixerunt exhilarando,  
Artus defectos reficitque, hepar reparatque.”

The last lines of this edition are on bleeding—when it should take place, in what part of the body, and for what affections. The answers may be summed up as: nearly always, nearly everywhere, and for nearly everything.

Such is this curious medical poem, once popular in many countries of Europe.

Several English versions of it exist of the whole or of parts.

I have quoted from one that was printed in London in 1607,<sup>1</sup> under the title of *The Englishman's Doctor, or the Schoole of Salerne*. The translator, whose name does not appear, sums up the contents of the book very well in the following lines:—

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<sup>1</sup> For J. Holme and T. Busby.

" Wit, Learning, Order, Elegance of Phrase,  
 Health, and the Art to lengthen out our dayes,  
 Phylosophy, Physicke, and Poesie,  
 And that skill which death louses not (surgery),  
 Walkes to refresh us, Ayres most sweet and cleare,  
 A thrifty table, and the wholesomest cheare,  
 All sortes of graine, all sortes of Flesh, of Fish,  
 Of Fowle and (last of all) of Fruits a severall dish :  
 Good Breakefasts, Dinners, Suppers, after-meales,  
 The hearbe for Sallads, & the hearbe that heales.  
 Physitian's counsell, Pottecaries pils,  
 (Without the summing up of costly bills)  
 Wines that the Braine shall nere intoxicate,  
 Strong Ale and Beere at a more easie rate  
 Than Water from a fountaine, cloths (not deere)  
 For the foure seuerall quarter of the yere.  
 Meats both for Protestant and Puritan,  
 With means sufficient to maintaine a man.  
 If all these things thou want'st, no farther looke,  
 All this, & more than this, lies in the booke."

Philemon Holland, of Trinity College, Cambridge, a laborious man of letters throughout his long life (1552-1637), besides translating Livy and Pliny and Suetonius, Plutarch and Xenophon, translated the *Schola Salernitana* into English verse. He died in 1637, and the book was published in Grub Street in 1649, with a dedication by Holland's son to Sir Simonds D'Ewes. Philemon Holland, who had taken a medical degree, seems to have cared for the book, for his son says—"And in those very verses (as I have heard my said venerable Father eft-soons say) is couched the whole body of Physick ad valetudinem conservandam."

The verse is seldom better than the kind which we associate with its place of publication. One example may be enough—the rendering of the curious lines—

" Singula post ova pocula sume nova  
 Post pisces nux sit, post carnes caseus adsit  
 Unica nux prodest, nocet altera, tertia mor est."

" A new laid Egge craves a good cup of wine  
 Drunk after it, it will the blood refine.  
 Nuts after fish, cheese after flesh is best,  
 In both these, they are helpfull to digest,  
 One nut doth well, the second doth offend,  
 Beware the third, it brings a deadly end.

William Withye also made a translation into verse in 1575, the rhythm of which often recalls that of Thomas Tusser, in

the Five Hundred Points of Good Husbandry. Withye thus renders the lines on pepper—

“Black pepper dispatcheth, yt tarrieth not,  
It quicklye dissolveth, because it is hotte,  
Yt purgeth flume, it helpes to digest,  
White pepper is good for pains of the brest.  
By this kinde pepper the stomache will gaine  
Grete ease, and yt suffers no coughe to remaine,  
The fever approchinge this pepper will fryghte  
Also the shakinge yt abandoneth quyghte.”

There are several printed German, French, and Italian translations, and the dates of these and of the Latin and English versions show that the book was much read throughout Western Europe up to the end of the seventeenth century.

After that time, though at least six reprints of the edition of Zacharius Sylvius were issued, the interest in the work gradually became archæological. Books on practical subjects are like languages—in one age living, in another dead. Their period of life varies. Thus the *Liber Etymologiarum* of Isidore of Seville, which includes a book on medicine, was taken down from the shelves of the very numerous monastic libraries which possessed a copy from the seventh century to the thirteenth. Some of the two hundred and twenty-six works of Muhammad Ibn Zakariya el Râzi, in the West commonly called Rhazes, were read for practical purposes from the eighth century to the seventeenth.

I have never seen a Spanish edition of the *Schola Salernitana*, and that it was not as well known in Spain as in England, France, Italy, or Germany is suggested by the absence among the numerous saws and proverbs of Sancho Panza or the wise remarks of Don Quixote of anything which shows an acquaintance with the Salernitan verses.

Among the Welsh medical maxims of the physicians of Myddvai, said to date from the thirteenth century, there are none which seem translations from the *Schola*.

There are Gaelic versions of some of the verses.

Thus the beginning of the poem, omitting the first line, occurs in a manuscript of 1563, which is in the British Museum (Additional, 15,582), and which was written in Ireland by David and Cairbre O'Cearnaigh for John MacBeatha or Beton of the famous medical family of the Isle of Mull and other parts of the Highlands. One of them, David Beton, became physician to King Charles I, and was admitted a Fellow of the College of Physicians of London, 25th June, 1629, and died in 1639. Arthur Jonston, also

a Scottish physician, wrote a short poem on an accident to a Dr. Beton, probably this one, containing a common sarcasm about the regular practice of physic—

*“De Betonio Medico.*

“Betonio nuper conspecto, portitor Orci  
Substitit and medio mersit in amne vatem.  
Flensque, lucri nobis, inquit, spes omnis adempta est,  
Per Stygias post hac nemo vehetur aquas.  
Quin vereor, si vita hominum revocabilis arte est,  
Ne redeant, Ditis regia quotquot habet.”

The O'Cearnaighs' rendering of the first verses of the Schola is—

“Madh ail beith follam agus madh ail slán do denumb dit  
Tog uait na h-irsniamh tréna agus creid corob dimain duit fearg  
do denum

Agus coigil an fin agus scrain codladh an meadhon la,”

and the couplet on “supper” is—

“Is moran pian do goile supair na hoidhche  
Ma hail leat bidh edrum: biot do shuipear co gearr.”

Another manuscript (Arundel 333), written in 1514 and 1519, in the south of Ireland, contains a translation of the lines on the four complexions of humours which occur in certain texts of the Schola. The translations are into prose.

“Largus amans ilaris ridns [*sic*] rubique coloris.

“Cantans carnosus satis audax atque benignus  
fer fola deirge .i. is amlaidh atá fer fola deirge taburtach grádmair  
subach gáirithech maille dath nderg ceolmar feolmar .i. glic cain-  
barrach.”

“Arstutus [*sic*] gracilis siccus croceiqe coloris.

“Irsutus fallax irraciens [*sic*] prodigus audax  
fer lenna ruaid [.i.] ard cael tirim maille dath buighe finnfach  
fallsa fergach nemdigbálach dána.”

“Hic sompnolentus piger in sputamine multus.

“Ebes huic sensus pingis facies color albus  
fer lenna fuair . . . .i. codlatach leasg maille seileagur mór  
maelinntinnech méith maille dath geal ar [a] aigidh.”

“Invidus et tristis cupitus dextreque tenasis

non expers fraudis temidis luteique coloris  
fer lenna duib. .i. formuidech dobbrónach miangusach maille  
láim deis connmálaig ní haen reann ceilgi bis ann ocus bíth sé  
eaglach maille dath na criadh ar a chorp.”<sup>1</sup>

<sup>1</sup> First printed by S. H. O'Grady in the Catalogue of the Irish MSS. in the British Museum. His interpretation of the contractions of this peculiarly difficult MS. is a wonderful example of Gaelic scholarship.

These fragments show that both the simpler and the more elaborate form of the text were known in those remote parts of the Western world where Gaelic was the language of literature.

At the beginning of this manuscript, at the top of the page, is written in a hand of the sixteenth century a curiously false account of its contents—"Historia de terra Pictica in lingua Pictica conscripta," with the name of the owner of that time at the foot of the page—"Wm. Howard, 1596," and a price; and there is a continuation and elaboration of the statement, page 16. The price is noted, but is almost illegible. It could hardly have been too high had this manuscript, which is wholly medical and philosophical, been a history of Pictland written in Pictish. How many obscurities of Scottish history might it not have made clear?

I wonder if the man who, in Queen Elizabeth's time, sold it to the English antiquary gravely pretended to read bits of history to him out of this collection of passages from such writers as Gaddesden, Philarctus, Isaac, Isidore, Galen, Averrhöes, Burley, and Albertus Magnus.

It is not improbable that a complete Gaelic version may some time be discovered. The mention of that literature reminds me of a well-known passage in the *Leabhar Breac*, a fourteenth century MS., on the requirements of literary composition—

"Cethardai condagar da cech elathain, locc agus aimser agus persa agus fáth airicc."

(Four things are proper to every composition—Place, time, author, and cause.)

Let us consider these in relation to the *Schola Salernitana*.

The place of its composition is invariably stated to be Salerno, a seat of medical study already known to the learned in Normandy and in England in the twelfth century. Ordericus Vitalis, an Englishman by birth, who spent his life in the Norman monastery of St. Girvult, speaks of the city of Salerno "where from long past times very great schools of medicine have been held," and Alexander Neckham, the foster-brother of Richard Coeur de Lion, says in his book *De Naturis Rerum*, "What shall I say of Salerno and Montpelier, in which the assiduous skill of physicians working for the public good has collected for the whole world a remedy against physical diseases?"

All the manuscripts begin with a passage which attributes

the composition of the book to the School of Salerno. The first lines are—

“Anglorum regi scripsit schola tota Salerni  
Si vis incolumen si vis te reddere sanum  
Curas linque graves irasci crede prophanum  
Parce mero cenato parum non sit tibi vanum  
Surgere post epulas sompnum fuge meridianum  
Non mictum retine nec comprime fortiter anum  
Hec bene seruando vitam longam tibi mando.”

The last of these lines is often

“Hec bene si serues tu longo tempore vives.”

To avoid care and anger, to drink little wine, to take a light supper, not to sit long at table, not to sleep in broad daylight. What better advice can be given at this day?

This is, of course, not sufficient evidence that the book was produced at Salerno, since in the Middle Ages, as in earlier times fictitious authors and places were attributed to books. The library of St. Augustine's Abbey, Canterbury, for example, contained a treatise, *De Ornatu Mulierum*, said to be written by Cleopatra (M. R. James, catalogue). Galen, in his commentary on “Hippocrates on the Nature of Man,” says, in a passage translated by Bentley in the course of his discussion of this question in the Dissertation upon Phalaris,

“When the Atali & the Ptolemes were in emulation about their Libraries, the Knavery of forging Bookes & Titles began. For there were those, that to enhance the price of their Bookes, put the Names of great Authors before them, and so sold them to those Princes.”

What was the complete original text of the *Schola Salernitana* we do not know, but taking that of which there are several manuscripts (though I have seen none earlier than the end of the fourteenth century), as representing the original text, the poem began—

“Anglorum regi scripsit schola tota Salerni,”

and ended with a line beginning—

“Ista super renes.”

The verses are sufficiently in accord with the books written and the books read at Salerno to make it reasonable to accept that school as the place of origin of the book.

When it first appeared there has not been determined, and would require a study of all the manuscripts, and particularly of those which may be in Italian libraries.

The date of its first composition or collection is also unknown, but may perhaps be the twelfth century.

Ægidius Corboliensis was physician to Philip Augustus (1180-1223), so that he flourished at the end of the twelfth and beginning of the thirteenth centuries. He received instruction in medicine at Salernum and speaks of his *Alma Mater* with due respect.

“terra Salerni,  
Urbs Phœbo sacrate, Minervæ sedula nutrix,  
Fons physicæ, pugil eucrasie, cultrix medicinæ.”

In his *Carmina Medica* occur the words—

“Quorum facunda Salerni  
Pagina describit,”

which Sir Alexander Croke<sup>1</sup> thought to refer to the *Schola Salernitana*, but since the lines are on drugs it might be maintained that they allude to the *antidotarium* of Nicholas or some other Salernitan work on *materia medica*. Two other lines, attacking the school of Montpellier,

“Quos gula, quos stimulat et cogit avara dolosi  
Ambitio nummi carmen ructare Salernum,”

seem to refer more distinctly to a definite book in verse, and may perhaps be taken as mentioning the *Schola Salernitana*.

Some expressions in Ægidius resemble those of the *Schola*, but such resemblances are common in mediæval books, and in most cases only prove that two writers have been derived from a common source.

Parts of the *Schola*, of Ægidius, and of the lines on herbs in another poem of the same age, Neckham's “*De laudibus divinæ sapientiæ*,” are derived from the more ancient Aemilius Macer “*De herbarum virtutibus*.”

In Macer's verses on the nettle, for example, occurs the line—

“Omnibus et morbis sic subvenit articularum,”

which is taken without alteration into the *Schola*. The lines in the *Schola* on onions are a rearrangement of seven unaltered lines of Macer. The two lines on the violet are the ninth and twelfth of Macer's poem, and of the three lines on hyssop the last is Macer's, while the other two and the lines on mint are based on his information.

<sup>1</sup> In his edition of the *Schola* (1831) Croke's whole introduction is little more than a translation of that of Dr. Renatus Moreau of 1625.



It would, I think, be possible to trace many of the verses on food to some earlier book, but I have perhaps said enough to show that the Schola is a compilation or collection, and not the work of a single mind.

The book is attributed in some manuscripts to a John of Milan. Thus, at the end of the manuscript known in the British Museum as Sloane 3,468 is written—"Explicit tractatus qui dicitur flos medicine compilatus a magistro Johanne de Mediolano in studio Salerni. Amen."

A manuscript (No. 177) in the library of Corpus Christi College, Cambridge, written in the reign of Richard II, does not mention John of Milan.

Another manuscript (Sloane 343) in the British Museum ends with the verses—

"Hoc opus optatur quod flos medicine vocatur

Et sic est finis laus deo gloria trinis

A<sup>o</sup> 1406, 16 Mai.

Explicit flos medicine magistri Arnoldi de Villa nova,"

and it is headed—"Regimen Sanitatis Salernitanum Magistri Arnoldi de Villa nova."

Arnold was certainly only a commentator who wrote at the beginning of the fourteenth century, yet the beautiful black-letter printed edition published by Peter de Dru at Paris, 21st November, 1505, has as its first words—"Regimen sanitatis a magistro Arnolde de noua villa cathalano et aliis doctoribus salerniensibus ordinatum feliciter incipit."

These variations of attribution show that the author was unknown.

The book became in later times, and especially after the invention of printing, a popular work, but in the thirteenth century it was perhaps used by students at Salernum to keep their memories refreshed on useful points, and certainly by those numerous practitioners in physic who were to be found in all monasteries, and who gave their brethren and the poor of the neighbourhood such advice and treatment as they were capable of.

There has been much discussion as to which king of England is intended by the "Anglorum regi" of the first line. Who he was was unknown in England, for no suggestion or gloss occurs in the manuscripts.

Some manuscripts (Brit. Mus. Sloane 351 and 3,229, and Additional 12,190, and the Bodleian 3,544 and 7,789) begin—

"Francorum regi scribit scola tota Salerni,"

and explain that Charlemagne is the king. This is, of course, a medical fable about him, of no more veracity than the story that the golden balls on the shield of the Medicis are in reality neither bezants nor pills, but cupping cucurbitulæ given them because their ancestor cured Charlemagne of severe pain in the loins by such an application. The manuscripts which begin thus are much longer, and go into subjects unmentioned in those which begin, "*Anglorum regi.*"

Thus, the place of the book may be conjectured to be Salerno, and the time the end of the twelfth century, while the author is unknown. The original object was to supply maxims for use in practice.

When was the book first used in England?

The manuscripts in the British Museum and at Cambridge and Oxford must first be looked at in order to answer this question. The British Museum contains sixteen manuscripts; the library of Corpus Christi College at Cambridge, two; and the Bodleian, seven, or perhaps more.

The British Museum manuscripts are of various degrees of interest. Ten belong to the original collection of Sir Hans Sloane, who bought many of the papers and books of the learned physicians who died in his time; two manuscripts come from the collection of Harley, Earl of Oxford, who bought all the fragments or complete volumes of manuscripts from monastic libraries, besides many other manuscripts, in the first half of the eighteenth century; two belong to the Royal collection, and two to the long series known under the title of "Additional." Of those in the Sloane collection, three belonged to the library of Dr. Francis Bernard. He was a physician of great learning, who had a fine library, in the contents of which he was well read. The catalogue of his books shows how wide were his interests. His father had suffered in the Royal cause, and on the recommendation of Charles II he was elected Apothecary to St. Bartholomew's Hospital.<sup>1</sup> He did not leave his post in the terrible year of plague, 1665. Later in life he became a physician, was elected a Fellow of the College, and held (1678-1698) the offices of Assistant Physician and Physician to St. Bartholomew's Hospital. The manuscripts which belonged to Francis Bernard are numbered in the Sloane collection 345, 351, 374, and it is possible that 337 and 3468 also belonged to him. Sloane 1,058 is the shelf catalogue of his library, and seems to show that he had not in all his fine collection a single edition of Shakespeare.

<sup>1</sup> Sloane 856 contains a copy of the Royal letter.

Sloane 345 is of the version beginning "*Anglorum regi.*" It is headed *Regimen Sanitatis Salernitanum Magistri Arnaldi de Villanova*. It contains about 308 lines, and seems to have been written in Germany. At the end of the Schola on f. 14 is the date, 16th May, 1406.

Sloane 351 begins "*Francorum regi,*" the address ending with the words, "*A me tot mille verba salutis habe.*" This is followed by an account of the *Res Naturales*. The whole MS. is of vellum, and the Schola Salernitana begins on f. 42 and extends to f. 92, containing about 1,400 lines. A tract called "*Experimenta Alberti*" precedes the Schola, and it is followed by the surgical treatise known as "*Compendium Magistri Ricardi.*" The following note occurs at the end of the verses:—"Tempore quo idem rex sarasenos devicitur in roncivalle quod latuit usque tarde et deo volente nuper prodiit in lucem." This is a fifteenth century MS.

Sloane 374 is a paper MS., beginning "*Anglorum regi,*" containing about 270 lines, and ending imperfectly with the words, "*dum carui carwey non sine febris fui.*" It is worthy of note, as showing what real uncertainty prevailed about the authorship of many of the lines of the Schola, that this line is attributed to Avicenna, in a Gaelic MS. on *Materia Medica* in the British Museum (Additional 15,403), where it occurs in the form, "*Cum caravi carui nunccam sine febro fui.*" The MS. is of the fifteenth century. I shall never forget the line, because it was the subject of the last of many delightful conversations with the learned, social, and always interesting Professor Robertson Smith. It was ten days before his death, and he was lying ill in bed in Christ's College, Cambridge. He made me fetch several Arabic books and dictionaries from the adjoining room, and conversed eagerly upon the names of Carraway in the East, and passages in literature where it was mentioned.

Sloane 382, which has Bernard's name written in it, is a MS. of the fifteenth century, of paper and vellum, contains about 230 lines, beginning with "*Anglorum regi,*" and ends with verses on crocus, ginger, cloves, and onion.

Sloane 337 is addressed to the King of England, and is of the fifteenth century. It differs in some respects from the commonest series of verses.

Sloane 3,229 is a MS. from the collection of Sir John Hoby. It is addressed to the King of the Franks, and has a somewhat longer note than Sloane 351 about Roncevalles. It begins with the words in Latin. "Here begin the medical verses put together by the Salernitan masters and doctors in

Apulia, written for Charles the Great, the most glorious (King) of the Franks, whose little work is divided into five parts, of which the first is about the naturals of man, the second about his non-naturals, the third of things opposed to the nature of man, the fourth of simple medicines, the fifth of the cure of diseases." It ends, "Explicit quinta pars versuum Salernitanorum." The MS. is of the fifteenth century.

Sloane 1,986 is a beautiful MS. of the reign of King Henry VI, as is shown by a chronicle in the same hand at the end, which ends as follows:—

"Then was Henry his son threequarters old  
After him reigned his son full ryght  
The sixth Henry that young knight  
The Duke of Bedeforde with goode intent  
Whas his unkel and of Fraunce regent  
The Duke of Gloster his unkel also  
Of Englande whas protector tho  
Yn his regne the VIII yere  
He whas crownyd at Westmynster  
And in the tenth yere by the by  
At Paryse he whas crownyd truly  
In ye XI yere Harlet the Frensche men  
Gate hit and in the XIX of his regne the  
Hart was goo throw Englishemen  
The Duke of Orliaunce whas prisoned then  
After delyured and went home and swor here and there  
He schulde ayenste Englonde vens army were  
And in the reyne of the XIX yere veramint  
Ye Duke of York was made Franc regent."

Sloane 3,468 is of perhaps the end of the fourteenth century. It begins "Anglorum regi," ends "hec super renes pecten pone fit juvamen," and contains 548 lines.

Sloane 1,965 is a late and unimportant paper MS. in folio.

Harley 3,407 and 3,706 are late paper MSS.

The two royal MSS., 12 E. VII and 12 B. XXIV, belonged to the collection of Charles Thayer. The former is a paper MS. beginning "Anglorum regi," the latter is the finest MS. of the Schola in the Museum, and is written straight on, the headings being placed in the margin. Preceding the verses is an alphabetical table of contents. It ends with the line, "Hec super renes." The same volume contains a copy of Macer De viribus herbarum, and at the end of the whole MS. the scribe has written, "Laudes Christe Jeso tibi. Nam jam fine quiesco." The MS. is probably of the fourteenth century.

At the foot of the first page is a finely executed capital R, which looks like the pressmark of some monastic library.

Additional 12,190 is addressed to the King of the Franks, contains 1,780 lines and ends, "Explicit Florarium versuum Medecinalium." It is a somewhat different text from any of the others, though containing most of the verses of the Charlemagne MSS.

Additional 18,752 is a late MS. addressed to the King of England.

The seven MSS. at Oxford are only known to me from the catalogue of the accurate Edward Bernard of 1697. Two of them appear to be of the Charlemagne form, of which No. 7,789 is of the year 1363. One other of the seven is in English. Thus, it will be seen that the examination of these twenty-five MSS. shows that the King of England form and the Charlemagne form are of equal age, as far as English MSS. can establish a date, but that the King of England form is the commoner, the less elaborate, and probably the more ancient.

The MS. at Corpus Christi College (177) belonged to Archbishop Parker. It contains an English chronicle which ends in the reign of Richard II, and the several treatises of which it is made up are in the handwriting of that reign. Several of them form a sort of reference library for preachers on temperance, such as a Dialogue between Wine and Water, between the World and Religion, between the Body and the Soul, Seneca on Drunkenness, St. Ambrose on Honest Manners, St. Augustine on Drunkenness, a Letter of Cyril to Augustine, Peter of Blois on the Conversion of St. Paul, St. Augustine to Cyril on the Apparition of St. Jerome (of course a mediæval romance), with other works attributed to St. Augustine. The touching story of Petrarch on the history of Walter the Marquis and Griselda his wife enlivens this temperance literature, and the MS. also contains some of the writings of James de Casulis, a Dominican, a copy of Æsop's Fables, and two other medical treatises besides the *Regimen Sanitatis Salerni*. This begins on folio 265 B., column 1, after a book of Arnold de Villanova *De Conresatione corpvis humani et de reginine salutoris*, with the words *incipit flos medecine*. The Flower of Medicine is a name often given to the *Schola Salernitana*, and may have suggested the titles of the *Lilium Medicinæ* of Bernard of Gourdon, and the *Rosa Anglica* of John of Gaddesden, both works of the fourteenth century.

The Corpus MS. begins "*Anglorum regi, scripsit tota Schola Salerni,*" and contains about 860 lines, ending with "*Ista super*

renes pecten pone fitque juvamen," followed by the words "Hoc opus optatur et flos medicine vocatur." The whole volume is one of those bibliothecæ so common in the middle ages, and is partly of paper, partly of vellum. There is also in the Corpus Library, No. 424, a fifteenth century manuscript of the same recension, entitled "Flos Medicine seu versus Salerni."

None of these manuscripts are earlier than the second half of the fourteenth century.

In the catalogues (M. R. James) of the libraries of Christ Church, Canterbury, St. Augustine's, Canterbury, and Dover Priory, only one entry is to be found which probably refers to the Schola. It is No. 1,613 in the fifteenth century catalogue of St Augustine's Abbey,

"Item liber de Regimine Sanitatis metrice compositus."

No copy is named among the books of Bury St. Edmunds (James).

A book whose phrases are so easy to remember might be expected to be used in quotations,

Alexander Neckham, whose poem, *De laudibus divinæ sapientiæ*, contains a great deal of the natural science of his time, was born in 1157 at St. Albans. He was educated at the school of that Abbey and in the University of Paris. He became Abbot of Cirencester in 1213, and died in 1217.

His poem was probably written in the reign of King John, and the sixth of its ten books treats of precious stones, herbs, and drugs. Thus he treats of the same subjects as the Schola, but shows no acquaintance with its verses.

The Schola says of coriander in one of its texts,

"Si tria grana voret coriandri seminis aeger  
Evadet febrem cui dat lux tertia nomen,"

and Neckam,

"Et triduana febris eget auxilio coriandri,"

with three more lines on other virtues of the seeds.

Of hellebore the Schola says,

"Pulvis admixtus pulvis mures necat ejus  
Et cum melle datus, est muscis perniciosus.  
Hydropsin, tetanum, leprum fugat atque podagram."

It kills mice and flies. Dropsy, tetanus, leprosy, and gout are driven away by it.

Neckham says of it,

“Hellebori nigri minor est violentia, sed quid ?  
Quis nigrum dignum laudibus esse negat  
Fistula, gutta, furor, paralyticus, hydropicusque  
Atque podagra, citam postulat ejus opem.”

It is not so strong as white hellebore, but cures fistula, gout, madness, the paleied and dropsical, and gout in the foot.

These examples show that Neckham and the Schola belong to the same age and both owe much to Macer. It is clear that Neckham had not read the Schola, and had it been well known in his time in England he would certainly have read it, considering his tastes and the subjects on which he wished to write.

The first author in England in whose writings any acquaintance with the Schola Salernitana is observable is Robert Grosseteste, Bishop of Lincoln from 1235 to 1253. He advised a Dominican whose health was bad to try sufficient food, proper sleep, and good humour, clearly having in his mind the Salernitan lines,

“Si tibi deficiant Medici ; Medici tibi fiant  
Hæc tria ; mens hilaris requies ; moderata dieta.”

To another friar who inclined to be melancholy he advised a cup of good wine, insisting on its quality, recalling in his expressions the line,

“Gignit et humorer melius vinum meliores.”

In earlier works, such as Eadmer's Life of Anselm and the Life of St. Hugh of Lincoln, though both biographers dwell upon the care and kindness of their subjects towards patients, no words pointing to an acquaintance with the Schola Salernitana are to be found. It is evidence that the book was not much known in England in the reign of Henry III, that Matthew Paris, so fond of poetical quotation, and so ready to bring out all that he had heard about everything, does not quote any line of the Schola Salernitana. Had its maxims already become part of the daily remarks of the attendants in the Infirmary of St. Albans some fragment of them would surely have found its way into the *Chronica Major* or the *Gesta Pontificum*.

On these grounds we may conclude that the Schola Salernitana first became known in England in the middle of the reign of Henry III.

A version beginning with the line to the King of England,

and containing perhaps three hundred lines, is likely to have been the first introduced from abroad.

There was at that time a bookshop on Ludgate Hill, on the left hand side as you ascend it, and just below the church of St. Martin. Just above the church was the gate of the city, known as Ludgate.

The existence of this bookshop is proved by a Latin charter, of which the original is still extant, and of which the date is known from its attestation by Ralph Eswy, the mayor; Adam of Basing and Hugh Blund, the sheriffs of the year 1243. The words of the charter are—

“To all the faithful of Christ to whom the present writing may come. Thomas the chaplain, rector of the church of St. Mary Sumersette, Thomas the chaplain vicar of the church of St. Nicholas Olaph, David the chaplain then holding office in the church of St. Martin of Luthgate executors of the will of Michael the cleric seller of books, health in the Lord. Be it known to you all that we have sold to John le Fraunceys goldsmith all that tenement with all its appurtenances which belonged to the aforesaid Michael below Luthgate next the church of St. Martin. To have and to hold by the aforesaid John and his heirs or assigns freely quietly hereditarily well and in peace for ever. Returning thence annually the due service to the Lord of the fee which is contained in the principal charter of that tenement which the aforesaid deceased Michael had thence and which to the said John with plenary seisin we have liberated. For this our final sale moreover the aforesaid John paid to us ten marks of silver of which we gave five marks to William son of the aforesaid Michael according to the will and disposition of Michael himself in his will. The other five marks we paid to the debts of the said Michael and so have fulfilled his will. And that this our final sale shall remain fixed for ever Dominus Peter of Neuport then Archdeacon of London at our instance and of the other just men present placed his seal together with our seals to this present writing. These being witnesses:—Sir Ralph Eswy then mayor of London, Adam of Basing and Hugh Blund then sheriffs: Laurence of Frowyk then alderman of that ward: Henry son of William: Geoffrey peyure: John calicer: Alexander marescall: Ralph: Thomas calicer: Robert plumber: Peter plumber: Hamo the bedell: Alexander and others.”

Important transfers of land in London at that time were usually, as this one is, witnessed first by the mayor and sheriffs, and then by the alderman of the ward. At the end of the list of witnesses came the bedell or serjeant (*seruiens*) of the ward, and very often the actual scribe of the charter. Alexander, who is the last witness of this charter, was its writer, and at St. Paul's and elsewhere many examples of his



beautiful penmanship are to be found. Four seals were appended to this charter, of which those of the archdeacon of London and of the rector of St. Mary, Somerset, have disappeared. The seal of the vicar of St. Nicholas Olaph bears an impression of a man's head, a classical intaglio. Such works of art were frequently used in the seals of that time. A few years ago, when a bank in St. Paul's Churchyard was being built, a gold ring, with a red gem, bearing a figure of Jupiter and a Gnostic motto in four letters, was found lying with some human bones, the remains of a burial in the old church of St. Gregory by St. Paul's. The fourth seal on the charter was that of David the chaplain, of St. Martin's, Ludgate, and bore a crescent and star.

The bookshop of Michael, the cleric, was on the pathway of the learned going to and from the Cathedral of St. Paul and the residences of the bishop, the dean and the canons, and the large society of secular clergy who lived in the precincts. Some of the men who lived near it, and perhaps looked in and turned over the books of Michael, the cleric, as they passed by, are easily ascertained from the chronicles and the documents of the period.

The bishop, the chief person in that part of London, lived on the north side of St. Paul's, where London House Yard marks the site of his palace. He was Roger Niger, a man of letters, and his great moral qualities caused him to be venerated during his life and after his death. One day when he was officiating at the altar in the cathedral a thunderstorm came on, with a deep gloom only broken by flashes of lightning. The thunder shook the building, and dust seemed to rise from the floor. Repeated peals terrified the congregation and they fled. Roger Niger went on unmoved with the service, and his intrepidity was long remembered in London. He gave many other proofs of it.

The dean lived on the south side of the churchyard, where the deanery still is. He was William de Sancta Maria Ecclesia, a village in Normandy, and was a man of some literary attainments.

One of the canons at that time was Master Reginald Besac, who had been to the East and knew at least the sound of Arabic. He was present when Saladin, exasperated by the abuse of a French lord who was brought a prisoner into his court, cut off his head with one blow of his sword. Matthew Paris, the historian, who knew this canon, may have looked into the shop and turned over Michael's books on one of his visits to St. Paul's.

St. Bartholomew's Hospital was outside the city wall, and its master, walking from Smithfield past Newgate along the Old Bailey, all of which streets then existed under their present names, to call upon the dean, must often have had the opportunity of entering the shop. He was a well-informed and travelled man, for he had been a pilgrimage to the Holy Land before he was elected master in 1223. His name was William.

One Scottish man lived in the neighbourhood, and his portrait is still to be seen on his seal, with a hood on his head and a staff in his hand. He had charge of the funds of the fabric of St. Paul's, where much building had been going on, for Roger Niger, the bishop, rebuilt the choir. He often went in and out of Ludgate, and up and down the hill past Michael's shop. In 1241 this Adam Scot gave to St. Paul's twelve shillings annual rent in the parish of St. Gregory,<sup>1</sup> and his obit was long commemorated there on the third of August. He had a daughter, Cecilia, who married Edward de Braye; and they had a son and heir named Stephen. These particulars, which I have ascertained from four original charters, of this old Scot living in London in the reign of Henry III, seemed likely to interest you here. Adam Scot must certainly often have seen the bookshop of Michael, the cleric, on Ludgate Hill.

Such was the bookshop, and such some of the men who may have been purchasers in it when the Schola Salernitana began to be known in England.

The book was easily read and easily remembered, and copies became more numerous in the next two centuries. The Schola Salernitana is quoted many times in the *Rosa Anglica* of John of Gaddesden, and in both the *Breviarium* and the *Florarium* of John Mirfeld, works of the middle and end of the fourteenth century. It was at the height of its fame in manuscript at the time of the invention of printing, and was first printed at Montpelier in 1480; and the numerous later editions and translations show that it had many readers, and was a favourite with the general public as well as among practisers of medicine.

The printed editions deserve consideration, but would take me beyond the subject which I have proposed for myself to-day, which was to show what was the period of prevalence

<sup>1</sup> Dugdale's *St. Paul's* mentions the gift. The charter itself is mentioned in Maxwell Lyte, IX, Report of Historical MSS. Commission, 12a, and another charter of his, 28b. Adam Scot appears in four charters (one of his own) which I have examined.

of the Schola Salernitana in the British Isles, and the time of its first introduction here.

Some members of our faculty think the history of medicine not worth study. They are inclined to dismiss it with some such remark as that of Thucydides, that neither in their actions nor in anything else were the men of past times great. Such a conclusion is to be regarded as merely the impatient remark of a man who grows oats, and therefore has no care for the cultivation of flax. Such men often come later to see that they were wrong. Thus Sir Michael Foster once at Cambridge made some deprecatory remarks on the study of the history of medicine, yet himself some years later made a valuable contribution to the subject in his lecture on Glisson. Medicine is a study and an art which has to do with every aspect of man, and the more we can learn of the operations of the human mind the more useful can we be to our patients. The physician, moreover, enlarges the usefulness of his own mind by the association of his observations and experiments with other kinds of academic work. Every subject, whether scientific or literary, gains in breadth by being examined in the past as well as in the present.

These are some of the reasons why it is worth while to study the history of medicine.

I thank you for having done me the honour to appoint me to give this lecture, and for having so patiently listened to it.

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## LACHRYMATION: ITS CAUSES AND TREATMENT.<sup>1</sup>

By FREELAND FERGUS, M.D.,  
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By lachrymation is meant either a hypersecretion of tears or else some obstruction to their passage into the lachrymal sac and nasal duct. To the first of these conditions the older writers<sup>2</sup> were in the habit of giving the name of "epiphora," to the latter that of "stillicidium." These terms have now become more or less obsolete, and are both usually included under the more general designation of "lachrymation."

Hypersecretion of tears is, comparatively speaking, a rare

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 31st January, 1908.

<sup>2</sup> Mackenzie, fourth edition, p. 85.

condition. Apart from emotional causes it occurs chiefly in connection with irritation of the conjunctiva, such as by the presence of a foreign body, by injury to the conjunctiva as by chemical fumes; it is also a frequent accompaniment of inflammatory diseases of that membrane. In these last instances, however, it is difficult, if not impossible, to say how far the apparent hypersecretion of tears is due to the action of the lachrymal gland, and how far it is merely the increased discharge from the inflamed membrane itself.

In many cases of eye-strain, particularly those due to an error of refraction or insufficient power of accommodation, lachrymation is often a prominent feature. The connection between the one condition and the other is not quite apparent, but that such exists should never be forgotten by the practitioner in dealing with lachrymation of apparently obscure origin. Very often accurate correction of an error of refraction will entirely relieve a patient from an annoyance which has troubled him for many years.

Probably the most frequent cause of lachrymation is some obstruction to the elimination of the tears by the usual passages. After they are secreted they pass over the eyeball and are taken up by the superior and inferior puncta, which are two small apertures found respectively on the edge of the superior and inferior eyelids near the internal canthus. The opening of each punctum is in health directed towards the eyeball, and opens into a small channel called the canaliculus. Usually the two canaliculi coalesce before entering the lachrymal sac. From the lachrymal sac the tears find their way into the nasal duct.

Lachrymation may be due to obstruction at the punctum, in the canaliculus, or in the sac and nasal duct. In a few rare instances the punctum and canaliculus seem to be absent altogether, or, at best, represented by the merest vestige. In such a case little can be done to remedy the inconvenience. If the lachrymation is troublesome the question of removing the lachrymal gland may arise. Sometimes there is marked stenosis both of the punctum and of the canaliculus; here gradual dilatation is often possible. Generally speaking, this is best effected by means of Mr. Nettleship's lachrymal dilator, which is an exceedingly useful and convenient instrument for the purpose. After the passages have been enlarged by its means probes may also be passed. Later we shall return to the discussion of the best forms of probes. It is, meantime, enough to say that probably the best yet obtainable are the original probes of Bowman.

Lachrymation is also frequently caused by displacement of the position of the lachrymal punctum. In health the orifice points directly towards the eyeball, but in various pathological conditions the opening is directed upwards, or even outwards, so that it no longer subserves the purpose of drainage. The most common cause of such a displacement is chronic inflammation of the conjunctiva and of the margin of the eyelids. Occasionally in advanced years the orbicularis muscle loses its tonicity, allowing the inferior lid to fall downwards. The same condition is found in paralysis of the seventh nerve. Finally, such displacements are sometimes due to cicatrices of the face caused either by disease or by injury.

The treatment of this form of lachrymation depends entirely upon the etiological factor. So far as is possible the condition causing the outward displacement of the eyelid should be removed by suitable treatment. Where the malposition arises from relaxation of the orbicularis muscle (paralytic or otherwise) much good may often be effected by the shortening of the lower eyelid. Where the displacement is caused by hypertrophy of the conjunctiva the operation described by us in vol. xxiv of the *Transactions of the Ophthalmological Society of the United Kingdom* is extremely useful, and generally gives a permanently good result. In some of these eversion cases the slitting of the canaliculus with a Weber's or Stilling's knife is sometimes justifiable and even necessary. After the performance of this small operation the drainage takes place from the inner extremity of the internal canthus. The objection to this operation is that the punctum and canaliculus are permanently destroyed, therefore it is an operation which should not be employed so long as there is a chance of the punctum being restored to its usual position. We concur with those who think it a mistake to use either of the knives above specified for the purpose of probing the nasal duct. In some of these cases the bony canal is rough and tortuous, and there is then always a danger that the point of the fine knife may become broken off in the canal. The instrument is a knife, not a probe.

We are of opinion that these eversion cases are the only ones in which it is legitimate to slit up permanently the whole of the canaliculus and the punctum. In others it may be necessary to dilate the punctum and even the canaliculus in a temporary manner so as to introduce the nozzle of the syringe or other instruments. It ought always to be remembered that if once the punctum is destroyed that the drainage can never be so good as if the punctum were

present and in its proper position. Consequently, dilatation prior to the introduction of the nozzle of a syringe should always be effected by Nettleship's instrument. As a matter of fact it is generally found that lachrymation continues to be troublesome in those cases in which the punctum and canaliculus have been permanently slit open.

Probably the most important group is that due to pathological changes either in the sac itself, in the nasal duct, or at the point of junction of these two structures. Many writers express the view that such cases of obstruction are due to stricture of the orifice between the sac and the duct, that this condition is primary, and that the retention of tears and suppuration are secondary. While not denying the possibility of stricture in this situation, nor the fact that if stricture does take place, there will be retention of tears, it seems to us that the vast majority of these cases is to be explained by a septic or inflammatory condition of the mucous membrane of the sac, and that the closure of its inferior opening is secondary to this condition and is not primary. The internal surface of the sac is not smooth, but is rugose, and is apt to become infected by such organisms as the pneumococcus and streptococcus.<sup>1</sup> Moreover, the structure is at times attacked by tubercle, and occasionally it is found to be the seat of malignant disease. The obstruction is generally due to the presence of some such condition, and is not primary. It is *post hoc* not *propter hoc*.

Once a septic condition is determined in the wall of the sac subsequent inflammation is either acute (acute dacryo-cystitis) or chronic (chronic dacryo-cystitis). In acute cases the symptoms are sometimes very severe. There is swelling and tenderness over the sac, the eyelids generally become much swollen, and the whole of the surrounding parts of the face may be erythematous. There is, generally speaking, a certain amount of constitutional disturbance; thus it is by no means infrequent to find increase of temperature, rigor, and even vomiting. In such circumstances it is almost impossible, and perhaps not rational, to distinguish between acute dacryo-cystitis and erysipelas, all the more so that in these very acute cases the streptococcus is frequently found. The patient suffers severely from pain, and ultimately an abscess forms, which if left alone will open externally on the face and may leave a permanent opening. In other cases, however, the wound heals and gives place to a chronic

<sup>1</sup> See the excellent papers by Tartuferi on the "Development of the Sac."

dacryocystitis. In course of time, however, the acute stage is likely to recur and go through the same process of supuration. Indeed, one occasionally sees patients who have had intermittent attacks for many years.

The pyogenic mucous membrane, however, does not always give rise to acute dacryo-cystitis. Many persons have such a condition for a long series of years without ever having an acute exacerbation. The danger in such instances is chiefly the fear of corneal infection in the event of the epithelium of that structure becoming abraded. So great is the danger that many years ago I removed a sac for dacryo-cystitis before operation for cataract. That must have been one of the first cases of sac extirpation for chronic dacryo-cystitis done in this country. In the acute stage the treatment must necessarily be expectant. It is not admissible, but, on the contrary, even dangerous to pass probes. The pain caused by the inflammation may often be greatly relieved by the local application of a little of the green extract of belladonna suitably moistened with glycerine. When an abscess forms it should be opened externally and the pus allowed to escape. . . . So soon as it becomes quiescent then more active treatment may be employed. In the latter state probes of small calibre should be introduced. They may be passed down the nasal duct, and after their withdrawal the cavity should be thoroughly irrigated with tepid normal saline. Little difficulty is experienced in passing a probe. The edge of the lower lid at the inner canthus is drawn tight by the fingers of the hand in which the probe is not held, and the point of the probe is introduced into the punctum; it is then shoved along the canaliculus, and, lastly, it is directed down the sac in a line from the internal canthus to the fold of the ala of the nose. Large probes, such as those of Theobald, are apt to do harm, from the fact that they bruise and even cause lacerated wounds in the tissues, thereby allowing the micro-organisms to get into the freshly-wounded tissues. Not infrequently in such cases careless or rough probing has given rise to an acute cellulitis extending to the orbit and even across the bridge of the nose to the other side of the face. The nearer to its point a probe is held in the surgeon's hand the better, for the less the leverage the less the probability of tearing or lacerating the soft tissues, and hence the less the likelihood of septic infection in the surrounding parts. For these reasons we prefer the probes of Bowman or the smallest size of Snellen's silver probes to the huge instruments sometimes seen. The large probes introduced

into practice by Theobald ought not, in our opinion, to be used at all.

Frequently the patient is ordered by the surgeon to empty the contents of the sac into the nasal passages by the simple process of pressing the sac itself. Very often such a practice is continued for years, and the patient thereby is kept in comparative comfort. Such a proceeding, however, is not altogether free from danger. Occasionally the patient exerts too much pressure, with the result that some of the septic matter is extruded through the membrane constituting the wall of the sac and infects the surrounding cellular tissue. Moreover, although the patient may be kept in comparative comfort for a number of years, still there is always lurking the danger of corneal suppuration in the event of that membrane losing its protecting epithelium.

In all cases of dacryo-cystitis judicious probing, with thorough washing out of the sac, should be carried out systematically in the first instance. Probably benefit is also to be derived from injecting into the sac a few drops of a 10 per cent solution of protargol. This, however, should be done carefully, for if the fluid find its way out of the sac so as to infiltrate the skin lying above it, it is apt to give rise to an unsightly and permanent argyrosis.

Where the condition is not relieved by this treatment, and especially in those cases in which chronic dacryo-cystitis gives place every now and again to an acute attack, it is generally advisable to remove the pyogenic membrane altogether by excising the sac. The details of this operation are already well known, so that it is unnecessary to mention them here. One of the best forms of operation is that recommended by Dr. Lewis M'Millan in the *Glasgow Medical Journal* for 1907.

The results of extirpation are all but invariably satisfactory. Disappointment seldom arises, but when it does, it is generally found that a portion of the pyogenic membrane has been left after the closure of the wound, and that it has given rise to the formation of an abscess. Patients make an excellent recovery from this operation, and, what is very remarkable, they almost never suffer afterwards from lachrymation, but are extremely comfortable. If in any particular case the patient should still complain of lachrymation, then the question of the removal of the lachrymal gland would naturally arise. This can very easily be effected by the double eversion of the upper eyelid followed by an incision through the conjunctiva overlying the gland.



To sum up. On no account should the canaliculus ever be slit in dacryo-cystitis. Such an operation is nothing less nor more than a piece of very bad and crude surgery. As well might you divide up another organ from its external meatus to its membranous portion for stricture in this latter situation. Probing should be little resorted to. A fine probe may be passed so as to ensure that the fluids with which you hope to cleanse the pyogenic membrane find their way into the nasal cavity. Probably the only good set of probes on the market are these of Bowman. Large probes should never be used, as they are apt to cause laceration of the tissues. It is steadily to be kept in mind that in dacryo-cystitis we are dealing primarily with a septic mucous membrane and not with a stricture. No drug that can be used is bactericidal, so that if drainage and washing do not avail to remove the septic condition, then probably the best line of treatment is the destruction of the sac either by caustic or by extirpation. It seems to me that a man who uses a very large probe has entirely failed to grasp the pathological condition: he makes the radical mistake of regarding the primary condition as a stricture, whereas in reality it is a septic mucous membrane.

NOTE ON A CASE OF PURULENT OTITIS MEDIA WITH INVOLVEMENT OF THE SIGMOID SINUS—OPERATION—LIGATION OF THE INTERNAL JUGULAR VEIN—SEPTIC ABSCESS OF THE LUNG—RECOVERY.<sup>1</sup>

By JAMES GALBRAITH CONNAL, M.B., F.F.P.S.G.,

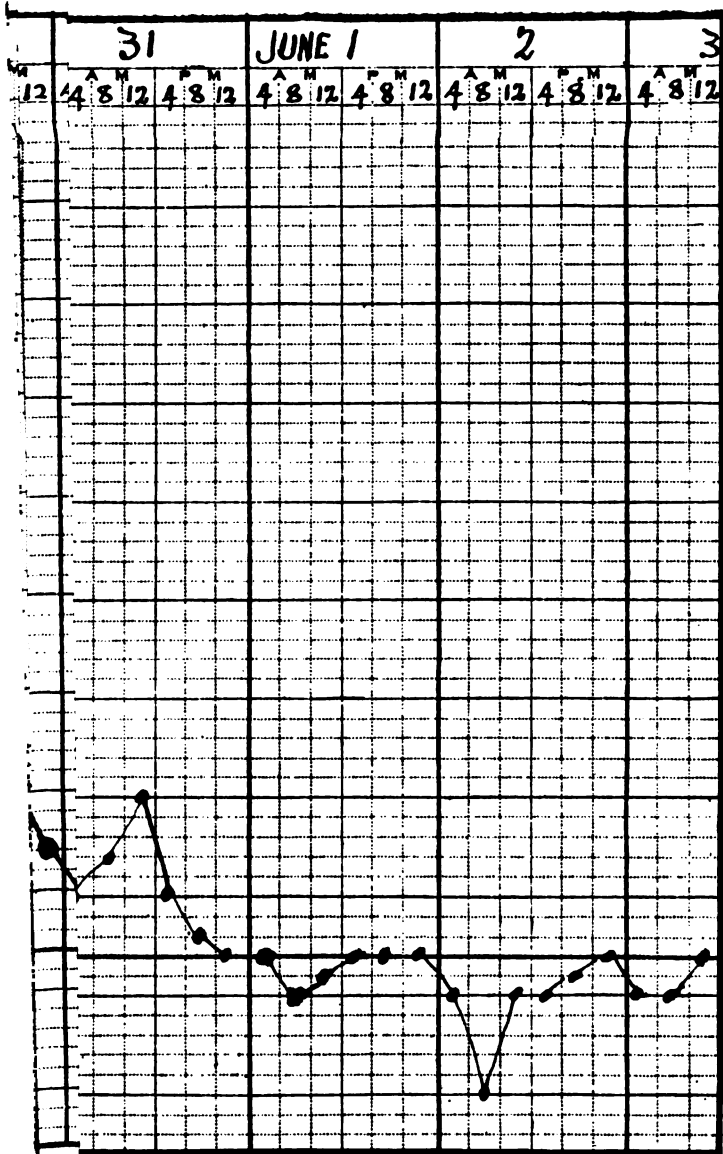
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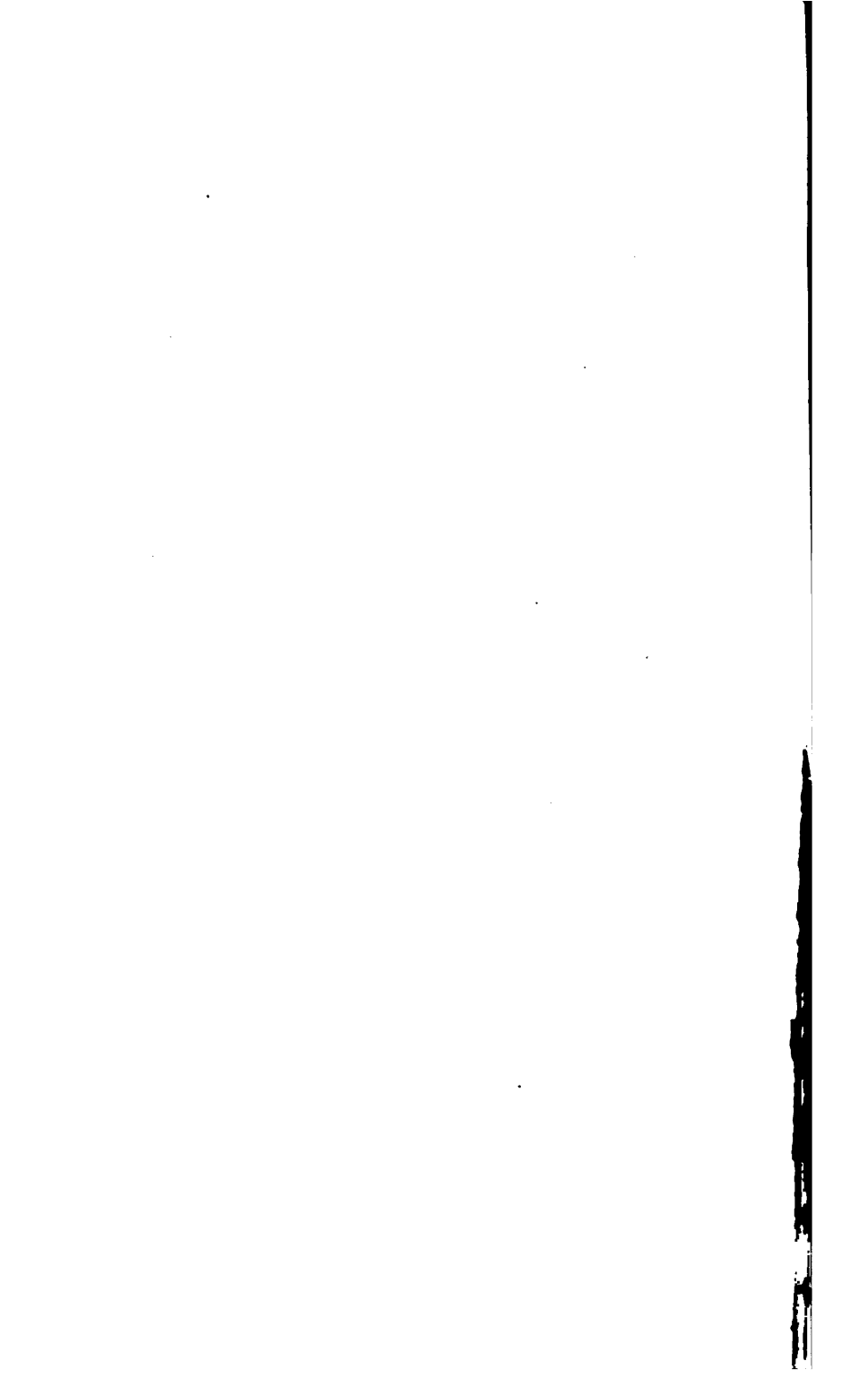
THE following case has some points of interest which make it worth recording:—

On 7th May, 1907, I was asked by Dr. J. W. Turner to see a girl, 15 years of age, with a discharge from the right ear, severe pain in the ear and head, and "severe shiverings."

She gave me the following history:—There had been a discharge from the right ear since teething in infancy, but

<sup>1</sup> Paper read and patient shown at a meeting of the Glasgow Medico-Chirurgical Society held on 20th December, 1907.





under treatment this had improved. When she was 3 years old the ear again suppurated, and the discharge had continued since that time.

When she was 12 years of age the ear troubled her very much, the discharge was offensive to smell, and she complained of pain in the head. At a local dispensary some granulations were removed from the canal, but after a time she ceased attending the dispensary, though she continued the treatment which had been prescribed there.

On 4th May, 1907, she took a "chill," with violent headache, and great pain at the back of the ear.

The next morning (5th May) she had a "severe shivering." She still suffered intense pain. The following day (6th May) she had another "severe shivering" which lasted half an hour, and which was described as much more severe than the first "shivering."

With the exception of the ear mischief she was considered a healthy girl. She had whooping-cough when she was 4 years old and measles when she was 7 years old. She was a pale, anæmic girl, with a temperature of 105·6° F. and pulse 140. In the external meatus of the right ear there were granulations and foul smelling discharge. There was no swelling over the mastoid, but there was considerable tenderness to pressure, and this was especially marked over the tip of the mastoid process. The pupils were large, but responded to light and accommodation. There was no facial paralysis, and no sickness or vomiting. The tongue was foul, and the breath was offensive.

Immediate operation was advised, but before this could be carried out she had a severe rigor which lasted for half an hour, and the temperature taken at that time was 105° F. (See temperature chart).

Under chloroform the mastoid antrum and the mastoid cells were freely opened up and found to be filled with granulations and pus. The bone was sclerosed; and the antrum was deep-seated. On working backwards over the groove of the sigmoid sinus, foul-smelling pus was liberated from over the sinus and between the sinus and the bone. The sinus was exposed to a large extent both upwards and downwards and then opened. There was free hæmorrhage, which was controlled by packing. The mastoid wound and the middle ear were packed with gauze and dressings applied.

Next morning the temperature fell to 98° F., but at 12 o'clock noon she had a severe rigor, lasting for a quarter of an hour, and the temperature rose to 102·4°, and later to

103° F. During the night the patient had a troublesome cough.

On 9th May the temperature rose from normal to 104·2°. Late that afternoon I ligatured the right internal jugular vein in the neck, and at the same time opened up the mastoid wound more freely and exposed the sinus to a greater extent.

On 10th May she had another rigor, and the temperature rose from 98·4° to 103·4°.

On 11th May she had a rigor lasting for twenty minutes, but not so severe as the former rigors.

For about a week after this, there were slight oscillations of temperature but no further rigors.

There was a rise of temperature to 104·6° on 20th May. During the time she had been under our care she was troubled with a cough, which often disturbed her sleep at nights. Dr. Turner, on examining the chest, detected some dulness on percussion and fine crepitant râles over the left lung.

There was evidence when dressing the wound that there was pus still coming from the groove of the sinus. Pressure on the neck close up to the mastoid caused pus to appear in the depth of the wound.

On 22nd May she was again placed under chloroform, and the groove of the sinus was followed downwards and inwards to a considerable depth. The wound was packed as before.

From the physical signs and symptoms it was now evident that there was a cavity in the left lung. The breath and the expectoration were most offensive.

On 1st June, that is, three weeks after the operation, the temperature was normal, and, with the exception of a rise to 99·4° on 3rd June, it remained normal after that.

During the course of her illness the patient had taken fair quantities of nourishment.

The after-history was uneventful. The convalescence was somewhat protracted by the appearance of a slight bead of pus in the lower part of the sinus wound. This was touched with carbolic, and latterly yielded to treatment.

It is perhaps worth while noting that, on all occasions on which it was administered, the chloroform was a source of considerable anxiety.

At the present time her condition is that the wound in the neck over the jugular and the mastoid wound have healed; the middle ear cavity is practically dry. Hearing distance—watch, right,  $\frac{2}{5}$ ; watch, left,  $\frac{4}{10}$ . The cough has disappeared; the lung has healed. On examining the chest there is no

evidence of any lesion. In general health she has greatly improved.

The points of interest in the case are—the chronicity of the ear mischief, culminating in involvement of the lateral sinus with repeated rigors, and the development in the lung of a septic abscess, from which complete recovery took place.

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## THE SERUM DISEASE IN MAN AFTER SINGLE AND REPEATED DOSES.<sup>1</sup>

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IN this paper it is proposed to contrast the appearances which follow one injection of anti-diphtheritic serum with the results of employing the remedy on more than one occasion. The serum in question is the blood serum of a horse which has been immunised to the toxin of diphtheria bacilli.

### I.—SINGLE DOSES.

Most cases of diphtheria are treated by single injection, and the effects are well within the knowledge of all who have had the disease in charge. After an interval of time, which has no relation to the curative influences of the antitoxin, evidences of a definite reaction are apparent in a certain number of cases.

*Serum rashes.*—The most obvious and constant features of the symptom-complex are the skin eruptions, or serum rashes. The frequency of these is variously reported. Hartung,<sup>5</sup> in 1896, with 4,358 cases, found a rash in 8.1 per cent, and with 2,661 cases in 11.4 per cent. At the hospitals of the Metropolitan Asylums' Board<sup>6</sup> in 1896 there were rashes in 35.2 per cent of cases; while in the six years (1898 to 1903), as stated by Rolleston,<sup>10</sup> the percentage of rashes in the hospitals of the same Board was 45, 34.5, 42.6, 43.6, 47.46, and 44.8. Stanley,<sup>13</sup> in 1902, writing on 500 cases, recorded

<sup>1</sup> Read at a meeting of the Glasgow Eastern Medical Society held on 19th February, 1908.

20 per cent of rashes. In the practice of Belvidere Hospital, of 474 persons admitted between 1901 and 1905, 259, or 54·6 per cent, had serum rashes. The discrepancies of these figures are due to various factors, of which dosage-rate is one of the most significant; but regard must also be had to the diathesis of patients, the severity of the disease, the constitutional quality of the serum employed, and the facility or stringency of observers in accepting the less obvious types of rash.

The interval between the injection of serum and the beginnings of the rash is a variable quantity. In the practice of Belvidere Hospital, the ninth has been the commonest day of onset. Of 259 rashes, 57 appeared on the ninth day. By the end of the tenth day, 191 of the total number had been noted. The mean of the total number was 9·5 days.

The duration of serum rashes at Belvidere Hospital has varied from less than a day to seventeen days. The mean duration of 259 rashes was 3·3 days. The commonest duration was two days, observed in 81 of the total number.

*Varieties.*—The physical characters of rashes are determined especially by the nature of the serum employed. One serum, for example, causes an urticaria, while another may lead to a circinate erythema, or an eruption resembling measles. The tone and sensibility of the patient's skin have also a potent influence. Of serum rashes in general urticaria and polymorphous erythema have been the most constantly recognised types, but scarlatiniform and morbilliform appearances are not infrequently observed. In Belvidere Hospital, during a certain period, it was often noted that rashes beginning as urticariæ changed into morbilliform or other varieties. The serum rashes are usually first observed at or near the site of puncture. They may remain localised, or affect the whole surface of the body. At times they are fugitive, trivial, or recurrent; at other times they prove of a persistent character.

*Other signs.*—The rashes are in many cases heralded or accompanied by other indications. With subcutaneous abdominal injection the inguinal and axillary glands may be enlarged and tender before the rash appears, and later this adenitis may be detected in the cervical and other areas. Pyrexia of a few degrees is not uncommon, but the temperature is not necessarily determined by the character of the rash, for a person with a severe rash may continue to show a normal temperature. Articular pains are present from time to time, and may be severe. During the incubation period of

the reaction, the blood of patients has been found to show a leucocytosis. The onset of the rash is followed by a leucopenia, owing to a reduction in the number of the polymorphonuclear leucocytes. The rash is accompanied by an œdema of a special type. The swelling is frequently obvious to the eye, and its degree may be estimated by weighing the person. The albuminuria which occurs in certain cases is not of serious import.

*Cause of reaction.*—The normal serum reaction in diphtheria patients may thus be described as a group of symptoms of which the most salient is a cutaneous eruption. Regarded at one time as an effect of antitoxin, the reaction is now ascertained to have no relation to that substance. In the first place, the remedial influence of antitoxin may often be obvious within a few hours of administration, while the corresponding serum reaction is deferred for a number of days. In the second place, similar appearances are observed in the treatment of other diseases with sera carrying other curative agents than the antitoxin of diphtheria; and in the third place, reactions of a like character to that of anti-diphtheritic serum may be elicited by the injection of the normal serum of the horse.

It is reasonable to conclude from the delay in the onset of rashes that horse serum is to man a bland or non-toxic substance at the time of injection. The eruption appears at a date which varies on either side of ten days, counted from the original puncture; but it never follows immediately on a first injection. In other words, a latent period or time of incubation intervenes between the first injection and the visible reaction, and the occurrence of such a latent period may be looked on as a sign that antibody formation plays a part in the matter.

That the antibody, if any, is not a hæmolysin is suggested by the experiments of Rosenau and Anderson,<sup>12</sup> who found that horse serum had practically no hæmolytic action on the corpuscles of the guinea-pig. That the antibody is not precipitin is a view which accords alike with the work of Von Pirquet and Schick,<sup>8</sup> who found that serum reaction and precipitin formation did not necessarily occur at the same time in man, and with further researches by Rosenau and Anderson<sup>11</sup> to the effect that horse serum, deprived of precipitable substance, had its toxicity unaltered for guinea-pigs. It is, however, significant that the serum reaction and precipitin formation, though not coincident in



time, occur side by side both in men and in animals, from which the presumption is that the reaction is due, not to precipitin-forming substance, but to a substance of the same class—that is to say, an antibody-producing substance.

In accordance with this view, the single injection of man with horse serum is followed after a latent period by the development of antibody; and the combination or reaction of this antibody with the antibody-producing substance in the bland horse serum injected leads to the production of a substance that is not bland, and whose toxic influence is shown by the rashes and general constitutional disturbance of the normal serum reaction. I have suggested elsewhere<sup>2</sup> that a secondary antibody may be the effective means of bringing the normal reaction to a close.

## II.—REPEATED DOSES.

It will be sufficiently apparent from what has been said that the reactions which result from single dosage have a certain general resemblance; the phenomena are not strictly constant, but they vary within moderate limits as if they originated under conditions at least approximately similar.

The results of repeated dosage, however, are remarkable for their diversity rather than their uniformity. In some cases the reaction agrees in time with that after single injection; in other cases it follows immediately on puncture. In some cases there is merely a local and fugitive erythema, while in other cases the reaction attains a severity which seems to threaten the life of the patient.

*Examples.*—The character of the different responses to repeated injection is exhibited in the following series of cases, ten in number, drawn from various sources, and arranged in five groups, with two cases in each group, for reasons which will appear. Injection and re-injection were subcutaneous in each example:—

*Group I:* CASE 1.—Kate S. (Ref. ii, 166), a case of diphtheria from the practice of Belvidere Hospital. This woman of 22 had two injections of serum, each of 12,000 units in 36 c.c., at an interval of three days. On the ninth day from the first injection she had an urticaria of moderate intensity and two days' duration, attended by a temperature of 101·2° F.

CASE 2.—Annie K. (Ref. iv, 64), a case of diphtheria from the practice of Belvidere Hospital. This child of 9 months had three injections, the first of 12,000 units in 36 c.c., the second and third each of 6,000 units in 18 c.c., all within a period of five days. On the eighth day from the first injection there appeared a profuse and general urticaria which lasted for five days, and in the course of which a temperature of 103° was noted.

The cases of Group I show normal reactions.

*Group II:* CASE 1.—Frieda Z. (Ref., Von Pirquet and Schick,<sup>8</sup> p. 79), a case of diphtheria from the hospital practice of those observers. On 26th June this child had 200 units as a safeguard. Thirty-seven days later, on 2nd August, she was admitted to hospital with diphtheria, and received on that day her second injection, amounting to 5 c.c. One hour after this second injection her face became red and swollen; her eyelids, in particular, were so cedematous that the right eye could not be opened. Two hours later urticaria was general, and the site of the puncture was markedly tender. Temperature rose to 101.5°.

CASE 2.—David W. (Ref. xii, 115), a case of diphtheria from the practice of Belvidere Hospital. This child of 1 year and 4 months received on admission 54 c.c. of anti-diphtherial serum by subcutaneous abdominal injection. After an interval of fifteen days he showed a general and somewhat profuse morbilliform rash of two days' duration. His highest recorded temperature during the rash was 102° F.

When twenty-one days had elapsed from the first injection of serum a recrudescence of diphtheria occurred, and the patient received a second injection of anti-diphtherial serum again into the subcutaneous tissues of the abdomen, estimated on this occasion at 18 c.c. Within half an hour of the second injection of serum an urticarial rash was visible on the skin of the abdomen. In six hours the rash had become vivid and general, extending over the whole surface of the body. Six hours later its brightness had begun to fade, and twenty-one hours after the second injection a faint suffusion in the area of the puncture alone was seen. Twenty-four hours after the injection no trace of the rash remained. Before the administration of the second injection of serum the temperature of the patient was 98.4° F. Fourteen hours after injection it reached its maximum at 103°.

The cases of Group II show abnormal reactions. The latent period is suppressed.

*Group III: CASE 1.*—Doctor's daughter at Kirchen a. d. Sieg (Ref., Rauschenbusch,<sup>9</sup> 1897). A boy of 3 and a girl of 4 in a doctor's family fell sick of diphtheria, and had each 600 units of antitoxin with satisfactory results. Five other persons of the household had prophylactic doses, each of 200 units. These were a governess, a maidservant, two boys, and a girl of 10. The boys and the women bore injection without discomfort; not so the girl of 10. In five minutes she complained of great itching at the site of puncture, and in ten minutes the whole skin surface was covered with a bright scarlet rash. The pulse grew weak; faintness ensued, and symptoms of a threatening character persisted till the following day. Alone of the five, who had equal doses, this girl reacted as described. Two years previously she had received antitoxin for diphtheria; and the injection which was followed by such forcible results was therefore her second injection of serum.

*CASE 2.*—Josef W. (Ref., Von Pirquet and Schick,<sup>8</sup> p. 98), a case of diphtheria from the hospital practice of these observers. On 4th March this boy, for croup following measles, was injected with 1,500 units of diphtheria antitoxin in 8 c.c. of serum. Sixteen days later he showed a normal polymorphous rash. On 31st March, twenty-seven days after the first injection, he had 3,000 units in 16 c.c. for recurrence of diphtheria. Fifteen to twenty minutes after this second injection vomiting set in, with deviation of the eyes. The boy was pulseless, and his extremities were blue. Urticaria appeared and reappeared from time to time in the course of the day, and the temperature rose to 101°.

The cases of Group III show reactions of abnormal severity, and the latent period is again suppressed.

*Group IV.*—The cases of this group were treated with horse serum other than anti-diphtheritic serum. For reasons already stated, however, it is fitting that they should form part of the series.

*CASE 1.*—G., a plague contact from the practice of Belvidere Hospital. This man of 35 had two prophylactic doses of Yersin's serum, 10 c.c. on each occasion, with an interval of ten days between. The first injection was followed by no reaction. Within twenty-four hours of the second injection the arm round the puncture was red and œdematous.

*CASE 2.*—Peter M. (Ref. iv., 112), a case of cerebro-spinal meningitis under my charge in Belvidere Hospital. This man of 21, by thirteen injections, had 575 c.c. of specific

serum in all. The first three doses were each 25 c.c.; the remaining ten were each 50 c.c. The first six injections were within a period of ten days, and on the fifteenth day a normal serum rash was evident. The seventh, eighth, and ninth injections, on the 21st, 22nd, and 23rd days respectively, were followed by no reaction, but the tenth injection, on the thirty-second day, was immediately succeeded by an erythema at the site of the puncture, measuring 14 centimetres in diameter, and lasting four hours. The eleventh, twelfth, and thirteenth injections, on the thirty-third, thirty-fourth, and forty-fourth days respectively, were followed by erythemata of equal duration, 12, 4, and 2 centimetres across respectively.

The cases of Group IV show abnormal reactions. The latent period is suppressed.

*Group V: CASE 1.*—Janet G. (Ref. xv, 18), a case of diphtheria under my charge in Belvidere Hospital. This child was twice admitted to hospital suffering from diphtheria. A period of five years separated the two attacks. On both occasions she received anti-diphtherial serum.

On her first admission to hospital, in the sixth year of her age, she underwent tracheotomy, and 48 c.c. of anti-diphtherial serum were administered subcutaneously. In seven days from this first injection a rash appeared, urticarial at its onset, later morbilliform, lasting three days. The rash was general and very profuse. It was not attended by a higher temperature than 98.8° F.

On admission to hospital five years later, in the eleventh year of her age, the child was again suffering from diphtheria. Membrane was situated on the fauces; the attack was of moderate severity. At this time 27 c.c. of anti-diphtherial serum were injected into the subcutaneous tissues of the abdomen; an interval of 1,817 days divided this, the second injection, from the first. On the fifth day from the second injection of serum an urticaria appeared on the chest. On the sixth day the limbs showed a circinate erythema; the face and the hands were swelled and marked by thick-set morbilliform macules: discomfort and restlessness were extreme. On the seventh day the signs had faded in some measure: but on the eighth day urticaria was general. On the ninth day a general circinate erythema and a general urticaria were both recorded. On the tenth day the skin was no longer abnormally coloured, but the swelling of the face persisted until the eleventh day. On the twelfth day the condition

of the child was normal. The highest temperature ascertained during the continuance of the rash was 100·2°. The duration of the rash was seven days.

This rash after the second injection was earlier in its onset by three days than the rash after the first injection. The severity of the second rash contrasts with the comparative mildness of the rash which followed the first injection.

The case of Janet G. is of special interest in view of the fact that her sister, Maud G., age 5, and her brother, Thomas G., age 8, were received into hospital each with a first attack of diphtheria on the same day and at the same hour as Janet G. was admitted with her second attack of diphtheria. In all three cases the faucial appearances were approximately similar; the sisters were equally affected; the membrane in the boy's throat was somewhat more extensive. In all three cases anti-diphtherial serum was administered at the same time; each of the sisters received 27 c.c., whilst 36 c.c. were given to the boy.

In the case of Janet G., as stated above, there began on the fifth day a rash of much severity and of seven days' duration; in the case of Maud G. no reaction was apparent until the ninth day after injection, when a trivial urticaria of eight hours' duration appeared on the abdominal skin. In the case of Thomas G., the twelfth day was reached without evidence of rash, but in the course of the twelfth day the abdomen showed slight urticaria. This urticaria was intermittent, lasting for two days in all.

CASE 2 (Ref. vii, 102), a case of diphtheria from the practice of Belvidere Hospital. This child of 3 years had a first injection of 12,000 units in 36 c.c., followed on the eighth day by a normal rash of five days' duration. A second injection of 9,000 units in 27 c.c., on the fifteenth day, for recrudescence, elicited no reaction. On the forty-third day, for a further recrudescence, the child had a third injection, 9,000 units in 27 c.c. This third injection was followed in two days by a local rash, which lasted for one day.

The cases of Group V show abnormal reactions. The latent period is curtailed.

*Influence of the latent period.*—Of the five reinjection groups, Group I alone has rashes which are normal in onset, course, and duration. But this is not the only point in which Group I stands alone. Group I differs from all the succeeding groups in the length of time between the first injection and the final injection before the rash. In the cases of

Group I the times between the first and the final injection were three days and five days respectively—that is to say, less than ten days in each case. In the cases of the remaining groups the intervals were ten days or longer. Thus reinjections in Group I were within the latent period of the normal serum reaction, as already defined, and in the other groups beyond it. The conclusion appears to be that when reinjections are made within the latent period, the ensuing reactions, if any, do not differ from the normal; but that when reinjections occur after the close of the latent period, the following reactions, if any, present abnormal characters. The examples given are merely types, but the conclusion is fully borne out by the published work of Von Pirquet and Schick,<sup>3</sup> Goodall,<sup>4</sup> Rolleston,<sup>10</sup> and other observers.

*Types of reaction.*—The abnormal reactions of Groups II to V, elicited by reinjection after the close of the latent period, show differences in the various groups, and will be referred to in order.

In the cases of *Group II*, each of which had two injections, with intervals of thirty-seven and twenty-one days respectively between first and second punctures, a diffuse urticaria made its appearance in an hour or thereby after reinjection. These cases are examples of Von Pirquet and Schick's *immediate general reaction*, which has no latent period. The immediate general reaction does not invariably follow so hard on reinjection as in the instances here recorded. Von Pirquet and Schick<sup>3</sup> accept an interval of twenty-four hours as conform to standard.

In the cases of *Group III*, the times between injections were two years and twenty-seven days respectively. In this group also there is suppression of the latent period. In five and fifteen minutes respectively, symptoms of profound constitutional disturbance set in, and the patients seemed near to losing their lives. These are examples of the immediate general reaction in its *violent form*, happily infrequent in the human subject, but common in suitably reinjected guinea-pigs, of whom a large number die.

In the cases of *Group IV*, the intervals between first and final injection were ten and thirty-one days respectively. The abnormal appearances were local, and were noted in less than a day. These cases are types of an *immediate local reaction*.

In the cases of *Group V*, of which one had two and the other three injections, the periods between first and final doses were 1,817 and forty-two days respectively.

In both cases the ensuing rash showed itself after an interval of more than twenty-four hours. In one case the abnormal reaction followed reinjection in four days, as contrasted with the seven-day incubation of the preceding normal reaction; in the other case the abnormal rash appeared in two days, also as contrasted with a preceding seven-day interval. These cases exhibit the *accelerated reaction* described by Von Pirquet and Schick in its general and local forms.

There are, therefore, two chief classes of the abnormal serum reactions—the immediate and the accelerated. Though examples have not been quoted, the same person may exhibit both. Both may be either general or local. Further, the immediate reaction may have a menacing aspect.

*Injection-reinjection interval.*—While the interval of time between injection and reinjection which is necessary for the production of abnormal reactions varies within wide limits, it is always found to exceed the length of the normal incubation period of the serum reaction in the case of the particular person under observation. *Minimum figures* for the interval are on record from several sources.

For the production of the immediate reaction, Von Pirquet and Schick,<sup>3</sup> in a tabular statement relating to sixty authentic twice-injected cases, found twelve days the shortest interval between injections. In the report of Goodall<sup>4</sup> on ninety reinjected persons, the corresponding minimum was thirty-five days; while in the practice of Belvidere Hospital the briefest injection-reinjection interval which determined an immediate reaction was the ten-day period of Case G., the plague contact of Group IV above.

For the production of the accelerated reaction the lowest injection-reinjection intervals of Von Pirquet and Schick and of Goodall were twenty-one and twenty-four days respectively. At Belvidere Hospital among one hundred and fifteen twice-injected cases of diphtheria, thirty-four days was the shortest interval which elicited an accelerated reaction.

*Maximum intervals* between injections which excited abnormal reactions have also been reported. Von Pirquet and Schick observed the immediate reaction when three years intervened between a first and a second injection. Goodall's corresponding maximum was three hundred and sixty-three days. No case of immediate reaction in Belvidere has shown an interval so long as either of these.

The accelerated reaction was noted by Von Pirquet and Schick after the passage of seven and a half years between injection and reinjection, and by Goodall after the lapse of 1,510 days. At Belvidere Hospital, injection-reinjection intervals of 1,817 and 1,838 days have been followed by accelerated reactions. All these maxima, however, would appear to be surpassed by the experience of Thorne Thorne,<sup>14</sup> reported in the current year, to the effect that a fourth injection, containing 1,000 units of antitoxin, caused an accelerated reaction in the nineteenth year from the first administration of the series. The intervening injections, however, in the fourteenth and sixteenth years respectively from the first injection, somewhat obscure the issue. The details of the case are these:—

Dr. R. Thorne Thorne, who relates his own experience, had his first injection of serum in 1889, when suffering from diphtheria. The second injection (prophylactic), in 1902, was followed by slight local urticaria. The third injection (prophylactic), in 1904, was succeeded by a more general rash. The fourth injection (prophylactic), in 1907, was followed in two days by a feeling of illness, which increased in degree. On the seventh day urticaria was present. Early in the morning of the eighth day severe vomiting occurred. The rash became general and intense, and swelling of the tongue caused some difficulty in breathing. On the ninth day the symptoms receded. The three prophylactic doses were each of 1,000 units.

*The practical point.*—Most serum reactions, whether normal or abnormal, are disagreeable rather than dangerous. The immediate reaction, however, in its violent form as described under Group III, above, carries with it a definite suggestion of risk to the lives of patients. The possibility of danger to man by reinjection was contemplated in 1903 by Arthus,<sup>1</sup> when reporting on the hurtful effect on rabbits of repeated injections of normal horse serum; and Otto,<sup>7</sup> who conducted experiments on guinea-pigs, has expressed the view that it is well to be circumspect in repeating the dose of remedial serum in the human subject. Assuredly in a disease like diphtheria, where the liability to heart failure has to be kept in mind, an excess of precaution is hardly possible; but the concrete question for practical purposes is this—Does the danger of violent reaction after reinjection of the serum outweigh the promise of benefit from the antitoxin? A negative answer is justified. Persons with severe diphtheria,



whose need of antitoxin is greatest, do not, as a rule, show intense serum reactions; and although cases of abnormal reaction have seemed to be near to death, I have found no published instance of life lost as a direct consequence of reinjecting a patient with serum. If the initial dose is sufficiently large, there will be no occasion for reinjection; if reinjection should be required, it will cause no abnormal effects if given within the latent period; but if reinjection proves necessary after the close of the latent period, it ought to be carried out notwithstanding, in the belief that any risk involved is worth the taking.

These remarks may conclude with a reference to certain theoretical considerations relating to the serum reactions which follow on reinjection.

*Reinjection within latent period.*—When repeated injection is made within the latent period of the normal serum reaction, the reaction which occurs, if any, is the normal reaction. This statement is in accordance with a law in antibody formation. It was demonstrated by Von Dungern<sup>3</sup> with reference to precipitin that repeated injection of the antibody-producing substance, within the latent period of the specific reaction—that is to say, before the date at which precipitin was found under ordinary conditions—did not hasten the appearance of precipitin. By the same law, reinjection of man with horse serum within a period of approximately ten days does not hasten the formation of the antibody, whose reaction with the serum injected liberates the rash-producing toxic substance. Thus the requirements for the abnormal reaction are not met, and the abnormal reaction does not occur.

*Reinjection outwith latent period.*—When repeated injection is made after the close of the latent period of the normal reaction, the reaction, if any, is of an abnormal character, and is either immediate or accelerated. The immediate and the accelerated reactions are separate phenomena, and are due to different causes.

With the *immediate reaction* the latent period is suppressed. That is to say, the reaction is not a result of antibody formation in response to reinjection. On the contrary, the specific antibody is ready prepared in the system as a consequence of the first injection. For this reason the combination of the antibody-producing substance contained in

the second charge of serum with the specific antibody produced by the first charge of serum takes place forthwith, the rash-forming toxic material is rapidly freed, and the abnormal reaction is visible immediately. I have suggested elsewhere<sup>2</sup> that the absence from the system of the secondary antibody, which brings the normal reaction to a close, may permit the abrupt manifestations of the immediate reaction.

With the *accelerated reaction* the latent period is not suppressed, but curtailed. That it is not suppressed may be taken as a sign that the specific antibody is not present in the system at the moment of reinjection. Its shortening may be looked on as evidence of a change in the adaptation of the animal body. The tissues in the interval between injection and reinjection have been modified in such a manner that the response to the specific stimulus has become more rapid. The possession of such an aptitude is a faculty, under natural conditions, which renders an animal good service. It places an animal at an advantage in combating diseases whose power to hurt is due to the proliferation of bacteria within the body; for it is clear that the capacity of an animal to overcome affections of this type, once they have gained a footing, depends, among other factors, on the speed with which it can elaborate antibodies to restrict the multiplication of the invading bacteria. But the intrusion into the tissues of an extraneous serum, not by any customary channel, but by subcutaneous or intravenous injection, is a procedure which is not in the course of nature; and the defensive powers of the animal body do not adapt themselves to it in a practical or effective way. The antibody-producing material of an extraneous serum appears to belong to an order of substances which stimulate tissue cells to accelerated reaction; but this is a form of activity which is obviously misapplied as a defence against agents which are not capable of spontaneous increase. In responding to serum with an accelerated reaction, the animal body may be said to observe the formality of immunisation; but the effort is misguided, and serves no useful purpose.

*Supersensitisation.*—Abnormal serum reactions in man recall the condition known as supersensitisation—or excessive susceptibility—which has been demonstrated experimentally in animals by injecting the blood serum of an animal of a different species, and by other means. Further experiment on animals will, no doubt, throw light on the appearances

which have been the subject of this paper, and will help to explain exceptions which it has not been practicable to refer to at this time.

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- <sup>2</sup> Currie, "On the Supersensitisation of Persons Suffering from Diphtheria by Repeated Injections of Horse Serum," *Journal of Hygiene*, January, 1907, vol. vii, No. 1, p. 57.
- <sup>3</sup> Von Dungern (1903), "Die Antikörper," Gustav Fischer, Jena, p. 109.
- <sup>4</sup> Goodall, "On the Supersensitisation of Persons by Horse Serum," *Journal of Hygiene*, July, 1907, vol. vii, No. 4, pp. 607, 617, 618.
- <sup>5</sup> Hartung, cited by Von Pirquet and Schick (below), p. 4.
- <sup>6</sup> Metropolitan Asylums' Board, Report of Statistical Committee, 1896, p. 188.
- <sup>7</sup> Otto, "Das Theobald Smithsche Phänomen der Serum-Ueberempfindlichkeit," *v. Leuthold Gedenkschrift*, Bd. i, reprint, p. 18.
- <sup>8</sup> Von Pirquet and Schick (1905), *Die Serumkrankheit*, Franz Deuticke, Leipzig und Wien, pp. 79, 89, 96, 98, 108, 114.
- <sup>9</sup> Rauschenbusch, "Vergiftungs-erscheinungen in Folge einer prophylactischen Seruminjektion von Behring's Antitoxin," *Berlin. klin. Wochenschr.*, 1897, p. 694.
- <sup>10</sup> Rolleston, "Some Aspects of the Serum Treatment of Diphtheria," *Practitioner*, May, 1905, vol. lxxiv, p. 661.
- <sup>11</sup> Rosenau and Anderson, "A New Toxic Action of Horse Serum," *Journal of Medical Research*, July, 1906, vol. xv, No. 1, p. 191.
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- <sup>13</sup> Stanley, "On Diphtheria Antitoxin Eruptions," *British Medical Journal*, 15th February, 1902, p. 386.
- <sup>14</sup> Thorne Thorne, "Hypersensitiveness to Anti-diphtheritic Serum," *British Medical Journal*, 18th January, 1908, p. 147.

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## Obituary.

JOHN SERVICE, M.D. GLAS., J.P., MOSSEND.

DR. SERVICE studied medicine in the University of Glasgow, and graduated in 1876 M.B., C.M., with "high commendation." He graduated M.D. in 1878. He subsequently held resident appointments in the Western Infirmary and in the Glasgow Fever Hospital. He was afterwards assistant to the late Professor Sir Thomas M'Call Anderson, and Assistant

Physician-Accoucheur to the Maternity Hospital. Becoming Medical Officer to the Tharsis Sulphur and Copper Company, he spent several years at their works in Spain; and on returning to this country he settled in practice at Mossend. His contributions to medical literature dealt with "Diphtheria," "Pilocarpine," and "The Local Treatment of Eczema," the last being a communication to the International Medical Congress of Seville. A few years ago Dr. Service was made a J.P. He was well known in Glasgow, and his sudden death, on the 18th ultimo, came as a surprise to his many friends both here and at Mossend.

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HUGH HARVEY FULTON, M.B., CH.B.

WE regret to have to announce the death of Dr. Hugh Fulton, who passed away on 6th February, at the early age of 25. The deceased graduated M.B., Ch.B.Glas., in 1904, "with commendation," and subsequently held resident appointments in the Royal and Western Infirmaries. After leaving the latter, Dr. Fulton was appointed assistant in the Physiological Department of the University, under Professor Noël Paton. By his death a career which seemed full of promise has been prematurely closed.

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CURRENT TOPICS.

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WESTERN MEDICAL SOCIETY.—The feeling has existed for some little time among the medical men resident in the Western district of Glasgow that a society should be formed on the lines of those already existing in the Northern, Southern, and Eastern districts of the city. For this purpose a meeting was convened by a provisional committee in the middle of January, when it was unanimously resolved that the project should be carried out, and the Western Medical Society was formed. The enrolment of members has been extremely gratifying, and already most of the medical men residing in the Partick, Whiteinch, Scotstoun, Jordanhill, and Hyndland districts have joined the Society. The objects of

the Society are to afford members the opportunities of meeting in a social capacity, and to have meetings at regular intervals, when matters of ethical and educational interest may be discussed. The following office-bearers have been appointed:—*President*—Dr. Arthur Mechan; *Vice-Presidents*—Dr. Wm. Snodgrass, Dr. J. Gibson Graham; *Secretary*—Dr. A. W. M. Sutherland; *Recording Secretary*—Dr. J. King Patrick; *Treasurer*—Dr. Geo. A. Allan; *Council*—Dr. J. Hamilton Campbell, Dr. W. A. Caskie, J.P.; Dr. F. Gracie, Dr. James Hunter, Dr. D. J. Mackintosh, M.V.O.; Dr. John Morton, Dr. James Scott, Dr. David Westwood, J.P.

**THE MEDICAL EDUCATION OF WOMEN.**—Some anxiety is felt in Edinburgh by those interested in the medical education of women. Minto House, the headquarters of the Association for the Medical Education of Women, has been sold. A suitable site for a new building has been found in close proximity to the buildings of the Anatomical Department of the University, and the Association hopes that the Carnegie Trust may be willing to afford the necessary financial help. The Association have, in response to a request from the University Court, formulated a scheme in which it is suggested that the University should consider the advisability of making arrangements for (1) the teaching of anatomy to women students; (2) the admission of women to all courses in chemistry, botany, and zoology; and (3) the teaching of physiology; further, that the University admit women to those classes where the professors are appointed under new ordinances, and in other classes, where professors were unwilling to teach women, should appoint special lecturers to do so; or that while the University admit women to the science classes, with anatomy and physiology, the Association, with the sanction of the University Court, as in the past, should be empowered to arrange with the extra-mural lecturers for the teaching of materia medica and of the third professional and final year subjects.

**THE ELECTRO-THERAPEUTIC SECTION OF THE ROYAL SOCIETY OF MEDICINE.**—At the forthcoming meeting of the section, to be held in the rooms of the Royal Philosophical Society, 207 Bath Street, on Friday, 22nd May, the local committee has arranged that the following firms will give an exhibition of electrical apparatus in the same place during the afternoon and evening of the day of meeting:—Messrs. K. Schall, Watson & Sons, Medical Supply Association, A. E. Dean,

Leslie Miller, Sanitas Electrical Company (London), Gaiffe (Paris), and D. B. Selkirk & Company (Glasgow).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS): GLASGOW COMPANIES.—On the 20th of last month, in St. Andrew's Halls, the Glasgow Companies of the Royal Army Medical Corps (Volunteers) held their annual gathering and presentation of prizes. Peculiar interest attached to the function, as it marked the close of the life of the corps. In common with Volunteers throughout the country, the Medical Corps has, as a Volunteer unit, now ceased to exist, as with the beginning of the present month the medical department of the Territorial Army comes into being.

The prizes and several medals for long service were presented to the various recipients by the Lord Provost, Sir William Bilsland, Bart. The companies and their friends thereafter engaged in dancing till a late hour.

Following the usual custom, the current number of the Corps *Annual* made its appearance at the gathering. As on former occasions, this publication is copiously illustrated, and gives a full account of the year's work. In addition to the numerous contributions by members of the companies, there are articles from the H.L.I. and A and S.H. Brigade Bearer Companies, and the Aberdeen R.A.M.C. (Volunteers).

The *Annual* closes with a valedictory paragraph by the editorial committee; and we are interested to find therein a hint of the publication at a future date of the history of the companies. The *Annual* is well worth perusal by the general reader, and reflects credit on the committee, and particularly on the editor, Captain Halliday, whose untiring industry in this direction is already well known to many of our readers.

It is hoped that a large number of the Volunteers will join the Territorial organisation; but it is as yet too early for definite information on this point.

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## MEETINGS OF SOCIETIES.

## GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1907-1908.

MEETING VII.—17TH JANUARY, 1908.

*The President, DR. WALKER DOWNIE, in the Chair.*

## I.—FRESH SPECIMENS.

BY DR. ALEX. MACLENNAN.

Two cases in one family of congenital lateral flexion dislocation of the patella. (X-ray plates.)

II.—LATERAL SINUS DISEASE: OPERATION: CURE.<sup>1</sup>

BY DR. W. S. SYME.

This boy, aged 6 years, was admitted into the Ear, Nose, and Throat Hospital suffering from a small painless swelling behind the right ear, and an otorrhœa of four weeks' duration. The tympanic membrane was destroyed in the posterior part. His temperature and pulse were normal, and there were no symptoms to cause anxiety. The case was looked upon as one of slow caries of the mastoid antrum and cells. The swelling was incised on 2nd November, 1906, and a carious aperture was found in the meatal wall of the antrum. The radical mastoid operation was performed on 13th November. The antral cavity and mastoid cells were found to be turned into one cavity filled with carious *débris*, the posterior wall destroyed, and the lateral sinus exposed to a large extent. The wall of the sinus was covered with grey, sloughy-looking granulations, which bled easily when touched, and which were not interfered with. The operation was concluded in the usual way. The cavity was packed, but the incision was left open in view of the condition of the sinus wall. A partial facial paralysis followed this operation. For three days his

<sup>1</sup> Patient shown.

condition was satisfactory, but on the evening of the fourth day his temperature rose to 102°. Thereafter he had rises of temperature with remissions. In view of the unhealthy state of the sinus wall, I was inclined to look upon the condition as one of toxæmia rather than an actual septic thrombosis of the sinus. The cavity was therefore dressed daily with wet carbolic dressings.

On 24th November, as there was no improvement, I exposed the sinus more fully posteriorly, where the wall appeared healthy, and downwards towards the bulb, in which direction the grey and unhealthy appearance of the sinus still persisted. Having introduced packing between the vessel and the bone at both extremities of the operation cavity, I slit the sinus open. For three-quarters of an inch in its long axis and for half the circumference the wall was thickened, and to the inner surface a firm dark clot was adherent. On removing the packing between the bone and sinus copious hæmorrhage occurred, but on controlling the upper part the flow from the lower part was of only moderate amount and was easily checked. This, I considered, pointed to a thrombus lower down partially obliterating the lumen. The sinus was packed. As after waiting thirty-six hours the temperature still pointed to septic absorption I ligatured the internal jugular, which, however, was not thrombosed at the part exposed. The incision in the neck was sutured. The result of this procedure was an improvement in the patient's condition. The wound in the neck closed in a few days, but at the end of a week broke down, and discharged a fair amount of pus for five weeks, when it slowly healed. The mastoid cavity took a long time to fill up, and the boy left the hospital after a stay of twelve weeks.

There are one or two points of interest in this case to which I should like to direct attention.

The mastoid disease developed in a most insidious manner without pain, and it was only the appearance of the small swelling which excited suspicion. Yet by this time the bone had been extensively excavated, and, looking to the condition of the sinus at this stage, he was evidently on the eve of a serious septic sinus thrombosis. Probably the course of events in the sinus was the following:—The inflammation of the wall led to a slowly-formed mural thrombosis at the affected part. For a time the actual ingress of organisms was resisted, but either from weakening of the wall, or from exposure of the granulations at the time of the mastoid operation, this resistance was overcome, and a secondary and



infected thrombosis occurred in the lower part of the jugular bulb.

The absence of rigors is another feature of interest. Though commonly present in cases of septic sinus thrombosis in adults, they are often absent in children.

The internal jugular was tied only after the operation on the sinus seemed to have failed to effect improvement. I say "seemed," because it is open to anyone to contend that sufficient time did not elapse between the two procedures.

The boy remained in a somewhat stupefied state for several days after the ligature of the jugular. The discharge of pus through the wound in the neck was, it seemed to me, the result of the breaking down of the clot in the sinus and upper part of the jugular, which found in this way a means of escape.

I regret that a bacteriological examination of the discharge from the ear was not obtained. Whatever the organism or organisms present, I am inclined to think we had to deal with a mild infective agent, and that this conduced to the successful issue.

The eyes were only examined a few days after the last operation, when Dr. Rowan found optic neuritis on both sides. He kindly made another examination five months later, when his report states, "The neuritis is passing off."

I should like, in conclusion, to express my obligation to Dr. Stoddart Barr and to Dr. Whitehouse for much kind help in the management of this case.

### III.—OPERATIVE PROCEDURES IN RELATION TO DISEASE OF THE FRONTAL AND SPHENOIDAL SINUSES.

BY DR. W. S. SYME.

Dr. Syme's paper will be found as an original article in our issue for March, 1908, at p. 188.

*Dr. J. Stoddart Barr* agreed with Dr. Syme in regarding preliminary intranasal treatment as of great importance. He thought the posterior ethmoidal cells should be removed before any opening into the sphenoid was made.

*Dr. Alex. MacLennan* advocated the preliminary ligature of the jugular when there was suspicion of sinus thrombosis. The operation could be done without danger, and might be of use in preventing dissemination.

*Dr. G. Burnside Buchanan* agreed with *Dr. MacLennan*, but also advocated leaving the vein open. He referred to a case under treatment for a large scalp wound without evidence of fracture of the skull. Two days, however, after dismissal she returned with symptoms of meningitis and thrombosis of the lateral sinus. A *post-mortem* revealed an extensive fracture running across the ethmoidal plate. There was also pus in the ethmoidal cells.

*Dr. Syme*, in reply, said that, with reference to ligature of the jugular in lateral sinus thrombosis, he agreed with those who held that, except in cases in which the thrombus had evidently extended into the vein, it should not be undertaken as a preliminary measure to evacuation of the sinus itself. This opinion was based on anatomical considerations. Moreover, he had seen, *post-mortem*, a case in which only one internal jugular was properly developed, the other being rudimentary. Again, septic infection of the lungs and other parts would not be prevented by cutting off the flow through the jugular. In this boy, too, distinct cerebral disturbance followed the occlusion of the vein. *Dr. Buchanan's* case of septic meningitis, following an accident, in a person the subject of ethmoidal disease, was comparable to those cases of middle-ear suppuration in which the same condition followed a blow on the ear. This had frequently been referred to in condemnation of the reprehensible practice of boxing children's ears. He agreed with *Dr. Barr* that a reasonable trial of intranasal treatment should be made in frontal sinus disease before resorting to external operation. With regard to the results of the latter, one should certainly aim at getting rid of the purulent discharge, but he hardly thought one had a right to expect a perfectly dry nose. With reference to the sphenoid, he would say rather open the sinus directly where this is possible, find the position of the lateral wall, and, taking your bearings from this, remove the posterior ethmoidal cells by working forwards.

#### IV.—PART OF A TOOTH IN THE MAXILLARY ANTRUM REMOVED AFTER SIX YEARS.

By *DR. W. S. SYME.*

A young man, on whom I had previously performed a sub-mucous resection of his septum, returned to me complaining of pain in the right side of his nose. The septum was quite healed, the nostrils patent, and the condition of his nose quite

healthy. There was no purulent discharge. He had a stump remaining of the first right upper molar. Thinking this might be the cause of the pain, I advised him to have it out, and referred him to a dentist. After extracting it, the dentist enquired as to the other two roots which were not in the alveolus. The patient stated that six years before his medical attendant had tried to remove this tooth but had only succeeded in breaking off the crown. On again examining the alveolus, it was found that there was an opening into the antrum at the place where the stump had just been removed, but that the other roots were not present. In view of the fault in its floor it occurred to the dentist that the stumps might have been driven into the antrum when on the previous occasion an unsuccessful attempt had been made to remove the tooth. He asked me to see the man. I passed a hook into the antrum, through the alveolus, and, after a search, came upon something hard in the malar angle of the cavity. By means of a hook made with the probe I succeeded after a time in extracting the double stump through the opening in the tooth socket.

The case is not very unusual, but it seemed to me it might be of some interest.

V.—CASE OF INJURY TO THE MOTOR AREA OF THE BRAIN.

BY DR. G. BURNSIDE BUCHANAN.

Dr. Buchanan's paper appeared as an original article in our issue for March, 1908, at p. 178.

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MEETING VIII.—31ST JANUARY, 1908.

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*The President, DR. WALKER DOWNIE, in the Chair.*

I.—CASE OF ABSCESS OF THE TEMPORO-SPHENOIDAL LOBE,  
WITH RUPTURE INTO THE LATERAL VENTRICLE.

BY DR. ALBERT A. GRAY.

Dr. Gray's paper will be published as an original article in a future issue of the *Journal*.

*Dr. William MacLennan* referred to a case recently under

his care, of cerebral abscess in a girl of 11 years of age. On trephining, a large abscess was found, which from its size had almost certainly ruptured into the lateral ventricle. A *post-mortem* examination was not obtained. The special interest in the case was that there was no history of ear discharge, nothing abnormal was found on examination of the ear, there was entire absence of pyrexia or shivering or vomiting, and there was no leucocytosis. The condition was thought most likely to be due to a tubercular tumour.

*Dr. Arch. Young* thought it had been a gradual leakage, rather than a distinct rupture into the lateral ventricle.

*Dr. A. A. Young* thought the most marked feature of the case was the length of time the patient had remained alive, and this suggested the idea that the use of a large drainage-tube might have prolonged life still longer, and possibly given some hope of recovery.

*Dr. Gray*, in reply to *Dr. Arch. Young*, agreed that it had been more a leakage than a rupture into the ventricle. He would certainly, if he got another opportunity, use a drainage-tube, and might by that method prevent dissemination and get a successful result.

## II.—LACHRYMATION: ITS CAUSES AND TREATMENT.

BY DR. FREELAND FERGUS.

*Dr. Fergus's* paper is published as an original article at p. 268.

*Dr. Leslie Buchanan* referred to a new operation recommended by Tati of Florence, in which the bone is perforated and a permanent communication established between the superior meatus of the nose and the lachrymal sac. The question, however, arose as to the advisability of draining a purulent fluid into the upper air-passages.

*Dr. Pollock* said he had found the infection to be due to the pneumococcus in 75 per cent, and to the streptococcus in 25 per cent of cases.

*Dr. Walker Downie* said he had found in some cases that the obstruction of the duct took place from some pathological condition in the inferior meatus.

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## GLASGOW SOUTHERN MEDICAL SOCIETY.

THE usual fortnightly meeting of this Society was held on Thursday, 5th March, Dr. John P. Duncan in the chair.

DR. A. K. CHALMERS, Medical Officer of Health for the City, read a paper on "The Position of Charitable and Poor-law Medical Relief in Glasgow, and the Need for Organisation." In the city there were the following organisations for giving relief:—Authorities who have a statutory obligation to give relief: (a) Poor-law authorities; (b) local authority; (c) school board; (d) charitable agencies.

Sixty years ago the Royal Infirmary was the only hospital and dispensary where indigent people could get free medical advice, and at that time they used it in all cases of illness. Nowadays there are twenty-seven hospitals and dispensaries where free advice and medicine are given, besides other places for cases of phthisis. Thus, in Glasgow poor-law hospitals there are 272 beds; in Govan, 278 beds; in Bellefield, 30 beds; in Quarrier's Homes, 80 beds; and in Lanfine Sanatorium, 14 beds. Exclusive of these beds, it was found that for the year ending 1907 the number of persons who obtained medical relief at one or other of the dispensaries was, roughly, 164,000, or 1 in 6 of the present population of Glasgow; and the time is coming when, in Dr. Chalmers's opinion, outdoor medical relief will be required to be renovated. He would suggest that Glasgow should be divided into three hospital areas—Royal, Western, and Victoria—each governed by a board, who would have free control over, and be responsible for the taking in of patients, giving medical advice, and putting down dispensaries in districts required; and attached to each there should be an almoner, who would ascertain the locus of each applicant; so that if this was adopted the abuse of medical charities, so prevalent at the present time, would be reduced to a minimum.

*Dr. Erskine* thought the idea of Dr. Chalmers was a most excellent one—to have responsible boards in the different districts, have every case investigated, and weed out those who could pay, as, in his opinion, there was as much abuse of medical charities now as many years ago.

*Dr. Robertson* thought that charity did not exist, as, in his opinion, all subscribers to the hospitals, whether their contribution was large or small, thought they had a perfect right to be treated free, and, if spoken to on the subject, as a rule

discontinued their subscription, showing that they (the subscribers) thought they had a perfect right to free medical relief.

*Dr. Lindsay Steven* spoke of his experience of thirty years' work as physician in the hospital and dispensary staffs of the Royal, Western, and Sick Children's Hospital, and in his experience he did not think there was any abuse of the medical charities; but he thought that there was a great difference between parochial and municipal relief.

*Drs. Hight, Hamilton, and Russell* also spoke in favour of an organisation to counteract the prevailing abuse that existed in connection with our hospitals and dispensaries.

A vote of thanks to *Dr. Chalmers* for his address closed the meeting.

## GLASGOW EASTERN MEDICAL SOCIETY.

THE fourth meeting of the Society was held on 20th November, 1907, the President, *Dr. John Patrick*, in the chair.

*DR. SAMUEL J. CAMERON* read a paper on Ovarian Tumours, and demonstrated specimens of the following:—(1) Simple retention cyst; (2) cysts of corpus luteum; (3) multilocular ovarian cyst; (4) ovarian dermoid; (5) cysts of paroöphoron; (6) cyst of hydatid of Morgagni; (7) hydrosalpinx of accessory Fallopian tube. He then discussed the various accidents and terminations, such as rotation of pedicle, suppuration in cyst, rupture, pregnancy, and adhesions. In the treatment of such cysts he avoids tapping, contrary to common practice.

THE fifth meeting was held on 18th December, 1907, in the Board Room of the Royal Infirmary, the President, *Dr. John Patrick*, in the chair.

*MR. J. HOGARTH PRINGLE* gave a demonstration of surgical cases.

THE sixth meeting was held on 15th January, the President, *Dr. John Patrick*, in the chair.

*DR. J. GALBRAITH CONNALL* read a paper on the "Diagnosis and Treatment of Empyema of the Maxillary Antrum," which was illustrated by a demonstration of patients present, and by lantern views. *Dr. Connal* discussed closed and open empyema. The flow of pus in the latter was free from pain, and contrasted with pain present in the closed form. The

origin might be nasal or dental. The chronic nasal form arose from the ethmoidal cells. In the matter of treatment, Dr. Connal preferred the alveolar operation in the acute forms. If this proved inefficient, it could be followed by the radical operation. By luminosity and the shadow test, Dr. Connal showed how to delimit the antrum.

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THE seventh meeting was held on 5th February, 1908, the President, Dr. John Patrick, in the chair.

DR. DAVID LAWSON, Nordrach-on-Dee, Banchory, N.B., read a paper on the subject, "Consumptive Sanatoria: Are they Worth While?" illustrating his remarks with lantern views.

Dr. Lawson's paper appeared as an original article in our issue for March, 1908, p. 161.

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#### GLASGOW NORTHERN MEDICAL SOCIETY.

AT the March meeting of the Society, PROFESSOR STOCKMAN lectured on "Some of the Newer Remedies." He said that most of the so-called newer drugs were simply chemical modifications of older remedies, and that the great majority of them were of little use except to fill the coffers of the large manufacturing chemists.

Of remedies he had found useful, Dr. Stockman spoke first of Dr. Menzies' polyvalent antistreptococcic serum in cases of acute and subacute rheumatism after the acute symptoms had passed off and there was a disposition on the part of the pains to "hang fire." At such a stage the serum was useful. It caused a local and general reaction, often followed by a cure.

Adrenalin was useful in asthma—5 minims of the 1 in 1,000 solution with  $\frac{1}{12}$  gr. of morphine often cut short an attack. Adrenalin was now made synthetically.

A new diuretic had been discovered recently by Schaafer. It was an extract made from the posterior half of the pituitary body. Probably, when its chemical composition was known, it could be made synthetically also.

Dr. Stockman had seen no benefit from treating Graves' disease with serum or milk from dethyroidised animals. With Wright's staphylococcic vaccine in the treatment of boils, carbuncles, &c., he had been disappointed.

Among other drugs touched on were hexamethylene tetramine, iodipin, stovaine, veronal, and thiosinamine.

## REVIEWS.

*Movable Kidney, and other Displacements and Malformations.* By DAVID -NEWMAN, M.D., F.F.P.S.G. London: Longmans, Green & Co. 1907.

IN this volume of some 200 pages the subject of movable kidney is fully treated. The anatomy of the organ, with special reference to the structures concerned in its normal fixation, is considered in the opening chapter, which contains much valuable information. The pathological anatomy, the etiology, progress and symptoms, the signs, diagnosis, prognosis, and treatment are taken up systematically. The result is a monograph which will demonstrate to those who are not already acquainted with the author's work that he is a master of his subject.

The allied topic of floating kidney, which is to be distinguished anatomically from movable kidney, is next considered; and the concluding chapter of the book treats of fixed malpositions and malformations.

Epitomes of cases referred to in the body of the work are given in a list at the end of the volume.

The author's remarks on the results of operation in neurotic patients will be appreciated by all who have anything to do with such cases; but, to surgeons, perhaps the most interesting item is the consideration of the various methods of fixing the movable organ.

The whole volume is, however, worth reading, and Dr. Newman is to be congratulated on it. The printing is clear, and the illustrations are of considerable merit, and the book reflects credit on both printer and publisher.

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*Anæsthetics: Their Uses and Administration.* By DUDLEY WILMOT BUXTON, M.D., B.S., M.R.C.P. Fourth Edition. London: H. K. Lewis. 1907.

THIS edition, as the author announces in his preface, "includes fresh articles dealing with dosimetry in chloroform, the use of ethyl chloride as a general anæsthetic, and the production of anæsthesia by spinal injection." The first of these subjects is dealt with at considerable length, and Dr. Buxton appears to be enthusiastic over the administration of chloroform by regulating apparatus in general, and by the Vernon Harcourt



inhaler in particular, to a description of which he devotes eight pages. We fear that this enthusiasm is not shared by the majority of anæsthetists, and giving chloroform "by machinery" is not likely to become popular, in Scotland at least. The articles on ethyl chloride and spinal anæsthesia give a fair *résumé* of the recent work done in these fields. The author holds that while ethyl chloride has its limitations, it is a useful and relatively safe anæsthetic, if given with care, in suitable cases; and we fancy this is the truth of the matter. Spinal anæsthesia, however, does not commend itself to Dr. Buxton, being hardly justifiable, he asserts, when general anæsthesia can be conducted with a minimum of danger by means of a regulating apparatus. We doubt very much if the use of regulating apparatus will ever become so general as to have any influence on the question at all. We are inclined to think that general anæsthesia will hold its place in the affections of both surgeons and public, even when accomplished by non-dosimetric methods. Dr. Buxton's manual is a reliable guide to the subject, and can be safely recommended to students and practitioners, for whom it is written.

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*Handbook of Diseases of the Eye and their Treatment.* By HENRY R. SWANZY, M.D., and LOUIS WERNER, M.B. Ninth Edition. London: H. K. Lewis. 1907.

THIS is a book which we can strongly recommend. The new edition is quite up to its predecessors, and contains the latest information on ophthalmic work. We have always had a high regard alike for Mr. Swanzy's scholarship and for his practical ability, and the present edition of the book, so long and honourably connected with his name, is thoroughly up to the mark both as regards the range of subjects treated and the practical sagacity with which it is written. We have no hesitation in saying that it is one of the best text-books in the English language alike for the student and for the practitioner, and we imagine that there are very few specialists who will not find a perusal of its pages of considerable use. It is astonishing to find how much thoroughly sound scientific matter is condensed into a volume of only moderate dimensions. Perhaps when the tenth edition is written, the authors will alter Fig. 12, for as it stands just now, light passing from a denser medium into one optically less dense is made to deviate towards the perpendicular. Were the author of the diagram to analyse it he would find

that the first and second nodal points lie respectively on the wrong sides of the optical centre; further, the finding of the optical centre is a much more difficult problem than the author seems to indicate on page 18. As a matter of fact in ordinary meniscus lenses it lies outside of the lens altogether. Apart, however, from such minor errors the book is excellent, and as in the past, so in the future, we shall continue to recommend it to students.

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*The Practical Medicine Series.* Edited generally by GUSTAVUS P. HEAD, M.D. Series 1907—Vol. I. Edited by FRANK BILLINGS, M.S., M.D., and J. H. SALISBURY, A.M., M.D. Chicago: The Year Book Publishers. Authorised Agents for Great Britain: G. Gillies & Co., 28 Gibson Street, Glasgow.

FAVOURABLE notice has already been taken in this *Journal* of the ten volumes which comprise the series for 1906, and the authors must again be congratulated on the production of a volume which, although it cannot be otherwise described than as a compilation, is full and complete, and gives a careful and exhaustive *résumé* of most of the up-to-date work accomplished in the departments of medicine with which it deals. The general editor has felt that matters of physiology, bacteriology, and pathology might be treated best in direct connection with the subjects in practice to which they bear closest resemblance, and accordingly the 1907 series has been arranged on this plan. We heartily concur with him on this point, and consider the present arrangement much more illuminating than the method adopted in last year's series.

The volume comprises—Diseases of the (a) Respiratory organs, (b) Circulatory organs, (c) Blood-vessels, (d) Blood and blood-making organs; also (e) General infectious diseases, (f) Diseases of the ductless glands, and (g) Diseases of the kidneys.

The importance of tuberculosis of the lungs, and the immense amount of work accomplished by various observers of all nationalities, find expression in the fact that, out of 153 pages devoted to diseases of the respiratory organs, no fewer than 111 deal with this subject. It is treated from the point of view of etiology, symptomatology, diagnosis, prognosis, and treatment, and practically nothing has been omitted from the sum of knowledge which we possess of this disease, to

which so much public attention has recently been directed. The other subjects treated in this volume are also very fully and exhaustively dealt with. The volume is well printed, and, contrary to one's general experience of works which are essentially of the nature of reviews, it is very readable and the interest well sustained. We consider that this volume will be of great use to the general practitioner, not only on account of the wealth of facts that it contains, but also as enabling him to focus his attention on clinical orthodoxy as it is presently established. The local agents for the series are Messrs. Gillies & Co., 28 Gibson Street, Glasgow.

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*Anæsthetics and their Administration: A Text-Book for Medical and Dental Practitioners and Students.* By FREDERIC W. HEWITT, M.V.O., M.A., M.D. Cantab. Third Edition. London: Macmillan & Co., Limited. 1907.

THE third edition of Dr. Hewitt's invaluable manual, while retaining all the excellent features of its predecessors, has been improved in many respects. Since the publication of the second edition, six years ago, much work has been done, both in the domain of scientific investigation (chemical and physiological) and in the advancement of practical anæsthetics, notably by the introduction of ethyl chloride as a general anæsthetic. This has entailed the incorporation of a considerable amount of new matter in the present edition, and the recasting, and in many sections the rewriting, of the work, so that an increase in size of 100 pages has been found necessary. The chapters dealing with the physiology of anæsthesia have been amplified by the addition of much new material on the subject of "Shock." The administration of definite percentage mixtures of chloroform vapour and air has received adequate consideration, both from the point of view of the laboratory and of the operating theatre. Dr. Hewitt is evidently not enamoured of the Vernon Harcourt regulating inhaler, and expresses the opinion that the inherent disadvantages of any form of regulating apparatus outweigh any advantages they may possess. Dr. Hewitt sums up as follows:—"However accurately an apparatus may deliver this or that percentage of vapour, it cannot prevent that state of intercurrent asphyxia which is liable, in certain cases, to complicate anæsthesia." A new chapter has been added on ethyl chloride, in which the method of administration, &c.,

are fully described, but the author does not venture to assign its place or value among general anæsthetics. The chapter dealing with the "after-effects" of general anæsthesia has been added to, in view of the recent valuable work done on "acid intoxication" and cognate subjects. The publishers are to be congratulated on the clearness of the type and the handsome appearance of the volume.

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*The Sigmoidoscope: A Clinical Handbook on the Examination of the Rectum and Pelvic Colon.* By P. LOCKHART MUMMERY, B.C., F.R.C.S. London: Baillière, Tindall & Cox. 1906.

IN this little book the author describes his modification of Professor Strauss's instrument, and indicates the method of using it. He also gives short accounts of various diseased conditions of the sigmoid colon. These are illustrated by drawings of the appearances as seen through the instrument. The volume will prove of use to those engaged in this department of surgical work.

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*Elements of Physics for Medical Students.* By FREDERIC JAS. M. PAGE, B.Sc.Lond. London: Cassell & Co., Limited. 1907.

The author of this book is examiner in physics and chemistry to the Society of Apothecaries, and students who are preparing for that examination will no doubt find all that is required of them in this book. At the same time the work cannot be seriously regarded as a text-book of physics. It is too much of a cram, and is, to our way of thinking, somewhat "scrappy." No mention is made of such pieces of apparatus as the lever, the inclined plane, or the balance; and almost the only use of the spherometer which Mr Page indicates is the subsidiary one of measuring the thickness of a plano-convex lens, a piece of apparatus which a student may see as a curiosity in his course. Even then, however, its thickness is not a matter on which a competent teacher will lay much stress. As already said, this is probably a suitable book for a student who is preparing for the examination of the Society of Apothecaries, but we cannot advise its use to anyone who is preparing for some other examination.

The author is sometimes sadly lacking in definition. Take one typical example. On page 211 the author states, "A collection of rays is called a pencil." Nowhere, so far as we have observed, has he defined a ray. He takes care to state the velocity with which light travels, but gives no indication of the methods adopted to determine the figure given, nor, so far as we have observed, does he mention the wave length of light.

With many excellent text-books suited to the requirements of medical students already on the market, we fail to see that there was any need for this one.

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*Ulceration of the Cornea.* By ANGUS MACNAB, B.A., B.Sc., M.B., Ch.B. London: Baillière, Tindall & Cox. 1907.

THIS is in all respects a trustworthy book, well written and carefully illustrated. The author has evidently given great attention to the pathology of corneal conditions, and his work contains valuable information as regards the pathology and bacteriology of all forms of corneal ulcer. It is therefore a book based on the best foundation, and is a reliable guide alike to the specialist and to the general practitioner. The practitioner who knows the bacteriology of corneal ulceration has at anyrate some idea of the corneal conditions which he is treating; the man who does not must be regarded at the present time as a mere empiric. We have no hesitation in cordially recommending Dr. Macnab's book.

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*Diseases of the Eye: A Manual for Students and Practitioners.* By J. HERBERT PARSONS, D.Sc., M.B., B.S. London: J. & A. Churchill. 1907.

THIS is a text-book like so many similar productions intended for students and practitioners, but one which in the main is well worthy of the high scientific reputation of its author. Dr. Parsons is widely known and highly esteemed on account of his writings on ophthalmic pathology and on physiological optics. He manages, however, to give a thoroughly clear and lucid explanation of the ordinary ophthalmic diseases, without making the book too technical or too difficult for the ordinary student. We hope that this elementary text-book will be

widely read by students, for we venture to think that it is one of the best in the English language. Further, it is thoroughly well illustrated, some of the coloured illustrations being particularly good. Perhaps the author in certain sections is a little too dogmatic, but after all that is not a serious defect in a book which is intended chiefly for junior students.

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*On Retroperitoneal Hernia.* Being the "Arris and Gale" Lectures on "The Anatomy and Surgery of the Peritoneal Fossæ," delivered at the Royal College of Surgeons of England in 1897. By B. G. A. MOYNIHAN, M.S., F.R.C.S. Second Edition. Revised and in part rewritten by the Author and J. F. DOBSON, M.S., F.R.S.C. London: Baillière, Tindall & Cox. 1906.

It is difficult to praise too highly this new edition of Mr. Moynihan's lectures. That the matter has been brought up to date is shown by references to publications so recent as April, 1906. While not a subject that appeals to the large body of general practitioners, it is one with which surgeons should be familiar; and to these we can recommend this book as one to be read and kept for future reference.

We already owe much to the author for his work in abdominal surgery. The present volume increases our indebtedness to a degree not easily estimated.

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*Atlas and Text-book of Human Anatomy.* By DR. JOHANNES SOBOTTA. Edited, with additions, by J. PLAYFAIR MACMURRICH, A.M., Ph.D. Vol. II: The Viscera, including the Heart. With 214 Illustrations, mostly in Colours. London: Saunders & Company. 1906.

THIS, the second volume of the *Atlas*, deals with the viscera. It is exceedingly well done. The text is lucid, and contains a considerable amount of detail. The plates are well executed in the different styles, which we mentioned in reviewing the first volume. The various structures are clearly represented, and their identification is rendered easy by the free use of names and pointers. As is inevitable, some inaccuracies have crept in, e.g., in Fig. 323 the gall-bladder seems to be running

upwards and backwards from the cystic duct; and Fig. 496 has been printed in the inverted position.

The volume may be recommended to all as a useful means of assistance in a difficult subject.

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*A Manual and Atlas of Orthopedic Surgery, including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment of Deformities.* By JAMES K. YOUNG, M.D. Phila. Illustrated with over 700 Photographs and Line Drawings, mostly from Original Sources. London: Rebman, Limited. 1906.

OF this volume we may say that the contents are, like the title, comprehensive. The author's object has been "to include in the work everything within the scope of orthopedic surgery, without encroaching upon the field of general surgery or any other specialties." The definition of orthopedic surgery, as "that department of surgical science which includes the preventive, mechanical, and operative treatment of chronic and progressive deformities," prepares the reader for the subsequent mass of material, and explains the large size of the volume.

The material is arranged in two parts—(1) General and (2) Special Orthopedic Surgery. In the first part, the author deals with the general etiology, classification, symptoms, and prophylaxis of deformities; and also with the procedures of tenotomy and osteotomy. In the chapter on classification is a table of diseases belonging to the department of orthopedic surgery. Amongst others are included tubercular affections of the larger joints, the various spinal curvatures, rickety deformities, club-foot, and ruptures of muscles and tendons. It is difficult, in face of such a classification, to understand what the author considers "general" surgery; and the difficulty is not removed when we come later to read the second part of the work. In this part the various conditions which we have seen tabulated are considered in great detail. This detail is perhaps excusable; but we have the feeling that some conciseness would have been advantageous. Tuberculosis of the joints occupies considerable space; and no labour seems to have been grudged in collecting the experiences of others as well as those of the author. In some ways, however, the author might have given us more detailed information. For example, on p. 485, in the treatment of obstetric paralysis we are recommended to employ massage and electricity, with, in

some cases, myotomy and tendon transplantation; but operation on the nerves affected is not mentioned.

As was to have been expected, talipes is considered at some length. The author speaks highly of tenotomy in the treatment of equino-varus; but he omits to mention Ogston's method of scooping out the osseous central portions of the tarsal bones.

The volume is illustrated by many plates and figures in the text, and is clearly printed. It contains a large amount of information; and while the contents exceed, perhaps, the scope of the title, this work will, and should be, read by all interested in the subject of orthopædic surgery.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

### MEDICINE.

**Pseudo-Tuberculosis of the Peritoneum: Report of a Case.** By Farrar Cobb, M.D. (*Boston Medical and Surgical Journal*, 26th December, 1907).—The case was that of a woman, aged 28 years, on whom the operation of ventrofixation was about to be performed, when, on opening the abdomen, a typical picture of tubercular peritonitis was displayed. The surface of the peritoneum everywhere, especially in the pelvic region, and most marked over the uterus, tubes, and ovaries, was studded with small miliary tubercles. There was no free fluid in the peritoneum, no intestinal adhesions, and no enlarged or palpable mesenteric glands. The stomach and duodenum were not examined for old perforation. The tubes and ovaries on both sides were removed, the tubes being suspected to be the origin of the trouble. Recovery was uneventful. Determined questioning failed to elicit a history of any previous acute abdominal condition. The pathological report showed the tubercles to be due to the irritation of true foreign bodies. The tubercles were encapsulated with dense connective tissue, and were composed of epithelioid cells, and in some cases also of giant cells. In the interior of some were foreign bodies, suggestive of the remains of vegetable material; and they were not true tubercles of tuberculosis.

The patient was well when last seen three years after the operation.

Substances which have been reported in such tubercle are hooklets from hydatid cysts, cholesterol crystals from dermoid cyst, eggs of the tania worm, and in a few, true foreign bodies, mostly fragments of vegetable food from perforation of gastric or intestinal ulcers.

The absence of ascites, adhesions, and enlarged mesenteric glands, the author holds, ought to put the surgeon on his guard, and make him excise a tubercle for microscopic examination.—GEO. A. ALLAN.

**The Use of X-ray Examinations in Pulmonary Tuberculosis.** By Francis H. Williams, M.D. (*Boston Medical and Surgical Journal*,



26th December, 1907).—In this article the author details some of the advantages to be gained by x-ray examinations in cases of pulmonary tuberculosis, and classifies these under numerous heads.

1. For early diagnosis—that is earlier than what is usually meant by these words. The points he lays stress upon in diagnosis are (a) restricted excursion of the diaphragm on the affected side, due to diminished expansion of the lung; (b) the heart and mediastinal contents drawn by the diseased, and pushed by the healthy lung toward the affected side in deep inspiration; (c) enlargement of the bronchial glands, especially in children; (d) a darkened apex of one lung, or of some other part. Two or more of these signs are usually found early, and, in addition, the small heart sometimes found in these cases will be shown. He lays stress on the fact that when examining for a darkened apex the light should be so low as barely to illumine the healthy side, and the patient should take a full breath. He mentions the case of a man, with no local physical signs of disease, in whom he made a presumptive diagnosis in October, 1903, on finding the excursion of the diaphragm on one side  $1\frac{1}{2}$  inches, as compared with  $3\frac{1}{2}$  inches on the other. Signs developed six months later, but it was not till fifteen months afterwards, with monthly examinations, that tubercle bacilli were found in his sputum.

2. For making a precautionary examination, where there is a possibility of the disease beginning—as in patients with bad family history, or in those exposed to infection, or with a daily though slight increase of temperature, or with hæmoptysis, or persistent cough, or with tubercle elsewhere in the body.

3. In cases which simulate pulmonary tuberculosis. Such a case is reported where phthisis was diagnosed by three physicians, but in which the diaphragmatic excursion was  $2\frac{1}{2}$  and  $2\frac{3}{4}$  inches on the two sides. A proposed trip was deferred; phthisis did not develop, and the patient died of cancer eight years later.

4. For determining the extent of the disease.

5. For determining the progress of the disease.

6. For recognising central lesions where the physical signs may be obscure.

7. For determining old lesions, as where indications of calcification can be demonstrated.

8. For determining the presence of phthisis, where other diseases, such as emphysema or asthma, obscure the signs.

He quotes also the evidence of Brook and Green, who state that (1) in no single case with signs of the disease have x-rays failed to detect the mischief; (2) in some cases without signs the rays have detected a lesion, of which signs have subsequently developed; (3) the early diagnosis is certainly helped; (4) the extent of the disease is often found to be greater than the physician thinks, and (5) the progress and results of treatment can be watched with great accuracy.

The fluoroscope and a radiograph, made during full inspiration, are both included under the term x-ray examination.—GEO. A. ALLAN.

**Chyluria due to Filariasis; with the Report of a Case.**  
By Richard F. O'Neil, M.D. (*Boston Medical and Surgical Journal*, 23rd January, 1908).—The patient was a negro, 53 years of age, and lived in Barbadoes till three years ago. For thirty years he had had trouble with his urine. At times it was filled with large clots or coagula, which on occasions had caused retention, and had to be broken up with a catheter. At other times the urine was white, but varied considerably. He also had cramp-like pains in his feet, legs, and pelvis. In the abdomen there was an indistinct non-tender and non-movable mass in each iliac fossa, which the author thought was due to lymphatic varices.

The urine was opalescent, and contained some very large pinkish-white gelatinous coagula floating in it. These occupied from a third to a half of the bulk. There was a large amount of albumen. The sediment contained a small amount of fresh blood and a few leucocytes. The presence of fat was demonstrated by extraction with ether. One specimen examined coagulated

in the glass. The skin of the scrotum was thickened, and the right side enlarged to the size of an orange. It contained fluid which did not, however, transmit light. It was supposed to be a chylous hydrocele, but on tapping contained 5 oz. of a slightly turbid albuminous fluid with many active spermatozoa. The skin of the thighs and abdomen was also thickened, but the legs were not enlarged, and no glands were felt. In a specimen of blood taken from the patient at 9 P.M. living filaria embryos were found after a considerable search. A differential count of 312 leucocytes showed - Neutrophile polymorphonuclears, 78.9 per cent; lymphocytes, 10.5 per cent; large mononuclears and transitionals, 6 per cent; eosinophiles, 4.4 per cent.

The author also deals with the subject of filariasis in general, and discusses lesions under the following heads:—(1) Lymphatic varix and varicose glands due to dilatation of the vessels and glands respectively; (2) elephantiasis, lymph scrotum, and lymph vulva, the œdema being due to involvement of the skin lymphatics; (3) chyluria, chylous hydrocele, chylous ascites, and chylous diarrhoea, according to the system into which the dilated lymphatics may rupture.—GEO. A. ALLAN.

## SURGERY.

**The Treatment of Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus.** By William B. Coley (*Boston Medical and Surgical Journal*, 6th February, 1908.—An interesting abstract is given by Coley of his method of treatment by mixed toxins.

This treatment was suggested by the fact that inoperable sarcomas, or even carcinomas, have been known to disappear permanently as a result of accidental attacks of erysipelas. Recently this has been experimentally demonstrated in dogs with multiple sarcoma.

The author notes 47 of his own cases, and 100 cases of other surgeons reported, where complete disappearance has taken place after treatment, without recurrence, and in 28 of his own cases, and 30 of others, three years or more have elapsed without recurrence. The other cases meantime are well, and may later be added to the list of complete cures.

The 28 cured cases include primary sarcoma of all kinds (except melanotic sarcoma), including large round celled, small round celled, mixed celled, and giant celled forms, and were situated in skin, muscle and fascia, and bone, in the neck, tonsil, pelvis, spine, long and short bones, and breast. On carcinoma there it not such a marked curative effect, and, unless exceptionally, the result is only inhibitory and temporary.

The cases in which treatment by mixed toxins is suitable are classified in three groups:—

1. Those cases where operation is impossible from the site or extent of the sarcoma, or from refusal of the patient's consent.

2. In sarcoma of the long bones, where operation means the sacrifice of a limb. In these cases where the condition is urgent operation is done, followed by injection of toxins in two or three weeks. In those cases where a delay of three or four weeks does not mean serious risk, toxin treatment is given a trial. If at the end of three weeks diminution in bulk is not observed, operation is proceeded with, as in that time usually an indication is got whether or not the treatment will be effectual. If actual growth is observed, after the first week the toxins are discontinued, and operation performed, with later return to injections to prevent recurrence. "Up to the present time I have been able to collect 12 cases of sarcoma of the long bones (3 personal cases and 9 reported by other observers), in which the use of toxins had rendered amputation unnecessary, and the limb has been saved."

3. Cases in which the sarcoma has been removed by operation. The toxins are used as soon as it is practicable, as their local action tends to prevent

recurrence, while their systemic effect leads to destruction of infected cells which may have been deposited in remote parts.

The risk of the method of treatment has been exaggerated, and there is no appreciable danger. The author has used the toxins in about 430 cases, and in only 3 could death have possibly been attributed to the injections, while these 3 cases were in the last stages with extensive metastasis and feeble heart action. Death was from embolism, and the toxins, as tested, were found to be sterile.

In 1891-92, during early work on the subject with injections of *living* streptococci, in 12 cases of inoperable sarcoma there were 2 deaths undoubtedly due to the inoculation. With the toxins as prepared now the risk is nominal.

The preparation of the toxins is minutely described in this article, and Parke Davis' preparation is mentioned as the commercial form. The product is made by adding dry powdered sterilised bacillus prodigiosus to sterilised streptococcus broth, and is then sterilised again at 75° C. for two hours. Dosage is commenced with one quarter minim diluted with boiled water, and injected at a part remote from the tumour. Reaction follows in the form of pyrexia (102° to 104° F.), with or without chill. The temperature is taken morning and evening, and two hours after injection. In a few days it is safe to repeat the injection into the tumour itself, unless there is great vascularity, or where the patient is very feeble, when it is best to ascertain first the susceptibility of the patient by repeated injections outside the limits of the tumour. In cases where the tumour is in a dangerous site, as on the abdomen or in the pelvis, the injections are always systemic, and are made into the buttocks or the thighs. The dosage is gradually increased, and injections are made only when the temperature is normal. In cases where injections can be made daily the effect is very pronounced, and in successful cases an effect may be noted in from two or three days to two or three weeks. The average duration of treatment in successful cases is between two and four months.—SPENCER MORT.

## DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

**The Condition of the Central Vein of the Retina in Acute Papillitis.** By Dupuy Dutemps (*Archives d'Ophthalmologie*, November, 1907).—Opinions have hitherto been tolerably equally balanced between the explanations afforded by intracranial pressure and local inflammation. The first statement of the author at present under review is that papillary œdema, whether due to an intracranial affection or to local compression, is caused by venous stasis, consequently its origin is mechanical and not inflammatory. The papillary stasis, he says, is due to compression of the vein at or about the point at which it crosses the dural sheath. This compression is brought about in such a condition as cerebral tumour by the distension of the optic nerve sheath from the introduction into its space of cerebro-spinal fluid under pressure. Papillary stasis is in such conditions a function of the increased intracranial pressure. When it is due to orbital tumour it only makes its appearance when the growth affects the anterior portion of the nerve and involves the vein. Several specimens which he has examined show that there is no constriction at the cribriform plate, and altogether, from the very interesting series of drawings which he gives, it seems to us that he has made good his contention. This goes far to justify the operative procedure so strongly advocated by Sir Victor Horsley in his memorable address at the British Medical Meeting in Toronto. (See also editorial article in *British Medical Journal* for 30th November, 1907.)

**Three Cases of Clonic Facial Hemi-spasm cured by Injection of Alcohol.** By Dr. Noceti (*Buenos Ayres Journal*).—These cases are reported by Dr. Noceti, and they seem in the main to have been successful. The first one was a case of a married woman, aged 36. The spasm affected the left side of the face, beginning with the orbicularis muscle, and gradually extending to the nose and to the commissure of the lips. The convulsive movements were arhythmic, they were not co-ordinated, and affected all the muscles of the half of the face. The spasm at first was noted to be clonic, but gradually became tonic, the period of tonus lasting for about ten seconds. The period between two consecutive attacks varied considerably, on an average it was about half a minute, but sometimes very much longer. This case was treated by the injection of a cubic centimetre of alcohol containing a centigram of cocaine hydrate at the level of the stylo-mastoid foramen. When the first injection was made at the end of three or four minutes facial paralysis supervened, but this latter disappeared in about half an hour later, when the hemi-spasm again set in. Three days later a similar injection was made; it was again followed by facial paralysis, but when that passed off the spasm did not reappear. These injections were made in February of 1907, the patient was seen on the 22nd of June, and there had been no return whatever of the untoward symptoms.

The second case is that of a veterinary surgeon, the right side of whose face was affected, all the muscles supplied by the right facial nerve being involved. On the 20th of April an injection of a cubic centimetre and a half of alcohol with  $1\frac{1}{2}$  centigrams of cocaine were given, and on the withdrawal of the syringe paralysis of the entire facial nerve set in; it was present for about ten minutes, when it passed off, and the spasm returned. On the 2nd of April another injection was made of  $1\frac{1}{2}$  cubic centimetres; when the paralysis passed off the spasm did not recur till some seven days later. On the 5th of May a larger injection was made, since which time the spasm has ceased to give trouble.

The third case is not one of any special importance.

**Ocular Manifestations of Juvenile Locomotor Ataxy.**—This is an excellent and exhaustive communication by Dr. Cantonnet, which appeared in the November journal of *Landolt's Archives*. From various sources the author has culled information as regards 88 cases, including an interesting one of his own. His conclusions are as follows:—Juvenile ataxy is rare but is not exceptional; it is almost invariably due to syphilis, either hereditary or acquired early in life. Juvenile tabes, contrary to what occurs in the adult, is much more frequent in females than in males. It begins with urinary symptoms or with amblyopia. The absolute immobility of the pupil is rare. Paralysis of the extrinsic muscles are not nearly so common as in the adult. Optic atrophy is particularly frequent, nearly half the cases showing it. This is rarely accompanied with ataxy; tabes occurring at an early age is very grave as regards sight, but does not seem to be of exceptionally bad prognosis concerning the life of the patient.

**Paralysis of Accommodation in Diabetes** (*Archives d'Ophthalmologie*, December, 1907).—Paresis or paralysis of the accommodation as a consequence of sugar in the urine is a fact which is not sufficiently dwelt upon in the text-books. The affection may cause pure and complete paralysis of accommodation without any loss of the iritic responses to light. The authors of this paper, Delord and Revel, give full details of a case which they have recently seen. The patient had been suffering for some years from glycosuria, and suddenly felt the sight much impaired. The eyeballs looked in all respects healthy, and the pupils responded to light. Without any correction, the vision was  $\frac{1}{8}$ , but with spherical + 3.5 it was  $\frac{1}{4}$ . The case thus was one of hypermetropia with complete suppression of the power of accommodation, but with perfect integrity of the responses to light. Glasses, suitable for distance and for near, were prescribed, and with these she

had excellent vision. A month later she returned to say that the vision had suddenly came back. At this time it was found that the urine was free of sugar. Both pupils contracted to convergence and to accommodation, vision in each eye was  $\frac{3}{4}$  without glasses, and with lenses of approximately +1 D each eye had full vision.

**Wounds of the Eyeball by Morsels of Glass.**—In the *Archives d'Ophthalmologie* for December, 1907, Bourgeois, of Rheims, discusses the treatment of injuries of the ball, and especially of the cornea by splinters of glass. He lays special stress on the cleaning of the wound of all what may be called foreign tissue, such as portions of iris and capsule, and of uniting the edges of the wound by sutures, so that corneal tissue is brought into contact with corneal tissue. For the purposes of suturing, he uses 00 absorbent catgut. Two needles are put on each piece, and they are introduced through the wound, and frausfix the cornea, one on each side of the wound, from within outwards.

## DISEASES OF THE SKIN.

**Lupus Carcinoma.** By Dr. James H. Sequeira (*British Journal of Dermatology*, February, 1908).—That cancer might develop upon lupus vulgaris was known to Alibert Rayer and Devergie, and from time to time considerable attention has been paid to it. The most complete monograph is by Ashihara (*Archiv. f. Dermat. und Syphil.*, 1901, vol. lvii), who gives an exhaustive analysis of 122 cases in literature, and describes three cases of his own.

In 1904, Norman Walker, who had seen several cases in a short time, suggested the possibility of the newer methods of treatment, particularly the x-rays, having something to do with their causation. In the same year Mendes de Costa described seven cases in 72 cases of lupus treated by x-rays, and MacLeod has once described a case. Dr. Sequeira was inclined for some time to think that the risk of epithelioma developing upon lupus as a result of x-ray treatment was insignificant; but he believes that this was due to his employing the Finsen treatment chiefly, and only using x-rays as a supplement in ulcerative lupus and lupus of the mucous membranes. The histories of these patients who presented themselves at the London Hospital led him to realise that there is considerable risk when frequent exposures to the x-rays are carried out over long periods. In these cases the exposures numbered hundreds. The danger lies, not in the setting up of a reaction, for this may prove curative of the epithelioma, but in constant irritation of frequent small doses. This is the cause of the radio-dermatitis of the x-ray operator, with its sequel in some instances of epithelioma. It is generally stated that epithelioma occurs on lupus vulgaris in about 2 per cent of the cases. During the past seven and a half years fourteen cases—1.5 per cent—have been seen in 964 lupus patients at the London Hospital. This percentage is considerably below that usually given, which is for cases before the introduction of x-ray treatment. Dr. Sequeira recognises, however, that many of his cases were early, and that some may eventually develop epithelioma. Of his fourteen patients, eleven already had epithelioma when first seen. Epithelioma occurred in two cases of lupus who had been treated by Finsen light for some months. There seems to be no direct causal relationship here, for between seven and eight hundred cases of lupus have been submitted to the Finsen light, some of them for several years, and in two only malignant disease occurred. In both the lupus was of twenty-five to thirty years' duration. MacLeod has shown a case in a woman, aged 68 years, in whom epithelioma developed after two years' treatment by light; but here, also, there seemed no reason to associate the treatment with the cause.

Dr. Sequeira gives a review of the facts brought out by his cases :—

*Sex.*—Lupus is much commoner in women than in men. Of his 287 male cases, epithelioma occurred in 10, or 2·87 per cent; of his 677 female cases, it occurred in 4, or 0·5 per cent. It is probable that the greater liability of males to exposure accounts for this greater proportion of carcinoma cases.

*Age.*—The average age at the onset of the malignant disease was 42·7 years—in the males 36 years, and in the females 46 years. In two of the males it developed as early as 22; the youngest female was 33.

*Duration of lupus before onset of epithelioma.*—Cancer only develops in long-standing cases, Sternhauser's girl patient, aged 9 years, being the marked exception. In all Dr. Sequeira's cases the duration had been over 20 years, and in one it had lasted 57 years.

*Previous treatment.*—The nature of the previous treatment affords little help in determining the causation. In three x-rays had been employed, in two Finsen light.

*Character of the lupus.*—In six the cancer developed upon what is called "red lupus"—a very chronic type. In the others it appeared to start definitely in scar tissue.

*Site of the cancer.*—In seven cases it was the cheek, in two the cheek and neck, in one the ear, in one the nose, in one the neck, in one the upper lip was involved, and the ulceration spread into the mouth, forming a huge sloughing cavity; in one case the disease was over the sacrum. In none was the mucous membrane primarily involved. Such cases have been described by others.

*Characters.*—In eight the growth was nodular, in six cases the ulcerative character was prominent. Thirteen were examined and found to be squamous epitheliomata with cell nests.

*Treatment.*—Whenever possible the tumours were excised as widely as possible and the bases treated with x-rays. Glands that could be reached were removed. The patient with a large ulcerating tumour over the sacrum was treated entirely by x-rays in 1904, and in January, 1908, there had been no recurrence.

*Results.*—Two cases have remained well for three, and one and a half years respectively. Seven are known to have died, the most rapid case being under one year. Three have been lost sight of. Two are still attending.

—J. WYLLIE NICOL.

**The Cure of Darier's Disease.** By Dr. Karl Herxheimer (*Dermatologische Zeitschrift*, January, 1908).—Darier's disease, or psorospermiosis follicularis vegetans, has up till now been considered incurable. All kinds of internal and external remedies have been tried without success. Dr. Herxheimer considers that by means of the thermo-cautery used superficially a permanent cure can be obtained. He describes two cases. In one there was no recurrence after several years. Only a few months have elapsed since the second was healed, so it is too early to judge of the result.

—J. WYLLIE NICOL.

## DISEASES OF THE THROAT.

**Foreign Bodies in the Upper Respiratory Passages and the Œsophagus.**—The direct inspection of the upper respiratory passages and the Œsophagus continues to attract more attention than ever. Professor Schrotter, of Vienna, has designed one of the latest instruments, which has been fully described in the *Journal of Laryngology* for August, 1907. Subsequent experience with this particular instrument shows that while the lamps are somewhat small and apt to burn out, still great illumination is obtained with a minimum of heat.

The blackening of the tube on the one side and silvering on the other has proved of great advantage, and, consequently, an inspection of the deeper parts is done with greater comfort than before. By modifications of the tubes, the ear, nose, mouth, and throat can be examined as well as the internal cavities of the body. There can be no doubt that Killian's work is going to prove of greater service, not only in the search for and recovery of foreign bodies, but in the diagnosis and treatment of other lesions.

Dr. Cauzard, at the meeting of the Parisian Society of Laryngology, Otology, and Rhinology, held last November, has also shown a new set of endoscopic instruments, with a small movable lamp in the interior of the tube. He has found his instrument useful in the extraction of foreign bodies from the œsophagus and the trachea in children. He has also treated a stricture of the œsophagus with bougies introduced under the control of the eye and left *in situ* for twenty-four hours.—JOHN MACINTYRE.

**Laryngeal Tuberculosis.**—Dr. G. A. Weill (*Proceedings of the Parisian Society of Laryngology, Otology, and Rhinology*, 8th November, 1907) states that as the result of two years' experience, he thinks that Marmorek's anti-tuberculous serum has a specific action on recent and limited lesions of the larynx. In twelve cases in these favourable conditions seven gave very good results, four were improved, and one failed. He was not so successful in old or extensive lesions of the larynx. The serum was administered subcutaneously and by way of enemata, the dose being from 5 to 10 c.c. In one week in four, however, the treatment was discontinued.

Mr. Harold Barwell showed a case at the meeting of the Laryngological Section of the Royal Society of Medicine in November, in which he had performed thyrotomy for laryngeal tuberculosis. The disease had existed since 1905, and when the larynx was opened the diseased part was cut away, the larynx scraped and lactic acid applied. The tracheotomy tube was removed immediately after the operation, but the wound broke down, and formed a sinus leading into the trachea. One year and nine months afterwards the parts healed up, the phthisis was quiescent, and, although the voice was gruff, the larynx remained healed.

The case is interesting inasmuch as thyrotomy may occasionally be of use in tuberculous cases, although Mr. Barwell admits that he would not recommend thyrotomy as a matter of routine.—JOHN MACINTYRE.

**Laryngeal Paralysis in Goitre.**—Dr. Eugène Felix (Bucharest) has written an important paper entitled "Laryngeal Paralysis in Goitre" (*Arch. Internat. de Laryngol., d'Otol., et de Rhinol.*, tome xxiv, No. 6, November-December, 1907). One of the important points brought out is the fact that paralysis of the recurrent laryngeal nerve takes place after operation.

Mr. James Berry (*Journal of Laryngology*, January, 1908), in reporting 274 further cases of operation, deals particularly with this question of concomitant and recurrent laryngeal paralysis, the symptoms being dyspnoea or aphonia, but in only one of Mr. Berry's cases was there definite recurrent paralysis. In the series of cases by this operator the percentage of cases of injury to the recurrent laryngeal nerve during the operation was very low.

Dr. Felix has collected 3,000 cases of operation, and finds that there are between 6 and 7 per cent followed by laryngeal paralysis. Sometimes this paralysis did not make its appearance for some months after operation. In all the 3,000 cases reported upon there was not a laryngoscopic examination beforehand. It should be remembered, however, that laryngeal paralysis may be the result of pressure from a goitre, and this may be, although it is not invariably, cured by operation.—JOHN MACINTYRE.

*Books, Pamphlets, &c., Received.*

- Functional Nerve Diseases, by A. T. Schofield, M.D. With three diagrams. London: Methuen & Co. (7s. 6d. net.)
- Principles and Practice of Modern Otology, by John F. Barnhill, M.D., and Ernest de Wolfe Wales, B.S., M.D. With 305 original illustrations, many in colors. London: W. B. Saunders Company. 1907. (24s. net.)
- A Text-Book of Diseases of the Nose and Throat, by D. Braden Kyle, A.M., M.D. With 219 illustrations, 26 of them in colors. Fourth edition, thoroughly revised and enlarged. London: W. B. Saunders Company. 1907. (18s. net.)
- Treatise on Diseases of the Skin for the Use of Advanced Students and Practitioners, by Henry W. Stelwagon, M.D., Ph.D. Fifth edition, thoroughly revised. With 267 illustrations in the text, and 34 full-page colored and half-tone plates. London: W. B. Saunders Company. 1907. (25s. net.)
- The Romance of Medicine, by Ronald Campbell Macfie, M.D. Aberd., M.B., C.M. Illustrated. London: Cassell & Co. 1907. (6s.)
- The History of the Study of Medicine in the British Isles, by Norman Moore, M.D. Cantab. Oxford: The Clarendon Press. 1908. (10s. 6d. net.)
- Rotunda Midwifery for Nurses and Midwives, by G. T. Wrench, M.D. With Introduction by the Master of the Rotunda Hospital. London: Henry Frowde and Hodder & Stoughton. 1908. (6s. net.)
- The Commoner Diseases of the Eye: How to Detect and How to Treat Them, by Casey A. Wood, M.D., C.M., D.C.L., and Thomas A. Woodruff, M.D., C.M., L.R.C.P. Lond. With 280 illustrations and 4 coloured plates. Third edition, enlarged and improved, with index. London: Henry Kimpton 1908. (10s. 6d. net.)
- Eye Strain and Eyesight: How to Help the Eye and Save the Sight, by John Grimshaw, M.D., B.S. Lond., D.P.H. Camb. Second edition. London: J. & A. Churchill. (1s. net.)
- A Chronology of Medical History, by James Young, M.D. Bristol: Edward Everard. (2s. 6d.)
- Minor Maladies and Their Treatment, by Leonard Williams, M.D., M.R.C.P. Second edition, revised and enlarged. London: Baillière, Tindall & Cox. 1908. (5s. net.)
- A Text-Book of Treatment (alphabetically arranged), by William Caldwell, M.A., M.D., John Campbell, M.A., M.D., F.R.C.S. Eng., Robert Campbell, B.A., M.B., F.R.S.C. Eng.; edited by R. J. Ferguson, M.D., F.R.S.C.S. Eng. London: Sidney Appleton. 1908. (10s. net.)
- Medical Philosophy: Man's Peculiarities, Weaknesses, Diseases, Degeneration, and Remedies, showing the Simplicity of the Science of Health and Disease, as Taught by the Best Writers in all Ages, in all Parts of the World, by W. Russell. London: Henry Kimpton. 1907. (7s. 6d. net.)
- Nisbet's Medical Directory. 1908. In Two Parts—Part I, Directory of Medical Practitioners; Part II, The Local Directory. London: James Nisbet & Co., Ltd. (7s. 6d.)
- Essentials of Surgery: An Outlook of Surgical Pathology, Diagnosis, and Treatment, for Students and Practitioners, by Alwyne T. Compton, F.R.C.S. Illustrated. London: Henry Kimpton. 1908. (4s. net.)
- Manual of Diseases of the Ear, Nose, and Throat, by John Johnson Kyle, B.S., M.D. Second edition, revised and enlarged. With 169 illustrations. London: Sidney Appleton. 1908. (12s. 6d. net.)
- Reports of the Society for the Study of Disease in Children. Vol. VII. Edited by George Carpenter, M.D. London: J. & A. Churchill. 1908. (12s. 6d. net.)



**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 21st MARCH, 1908.**

	WEEK ENDING			
	Feb. 29.	Mar. 7.	Mar. 14.	Mar. 21.
Mean temperature, . . .	39·3°	38·0°	40·8°	38·0°
Mean range of temperature between day and night, . .	21·2°	19·2°	22·2°	18·3°
Number of days on which rain fell, . . . . .	6	3	2	1
Amount of rainfall, . ins.	0·92	0·34	0·78	0·03
Deaths registered, . . .	314	340	334	342
Death-rates, . . . . .	19·1	20·6	20·3	20·8
Zymotic death-rates, . . .	3·3	2·8	2·9	3·0
Pulmonary death-rates, . .	4·9	5·7	5·9	6·8
DEATHS—				
Under 1 year, . . . . .	60	80	66	62
60 years and upwards, . .	55	76	84	72
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	33	31	35	30
Scarlet fever, . . . . .	3	3	2	3
Diphtheria, . . . . .	5	3	1	1
Whooping-cough, . . . .	8	9	6	13
{ Fever, . . . . .	4	1	...	1
{ Cerebro-spinal fever, . .	7	5	5	1
Diarrhœa, . . . . .	6	2	12	6
Croup and laryngitis, . .	1	1	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	55	82	65	81
CASES REPORTED—				
Small-pox, . . . . .	1	...	...	...
Cerebro-spinal meningitis, .	8	4	2	5
Diphtheria and membranous croup, . . . . .	23	25	17	18
Erysipelas, . . . . .	22	22	18	16
Scarlet fever, . . . . .	42	54	50	30
Typhus fever, . . . . .	...	...	...	...
Enteric fever, . . . . .	3	1	10	6
Continued fever, . . . .	...	...	...	...
Puerperal fever, . . . .	1	1	3	7
Measles,* . . . . .	727	697	732	741

\* Measles not notifiable.

THE  
GLASGOW MEDICAL JOURNAL.

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No. V. MAY, 1908.

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ORIGINAL ARTICLES.

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ON THE CAUSATION AND TREATMENT OF  
DIABETES.<sup>1</sup>

By DR. ARNOLD LORAND, OF CARLSBAD.

DIABETES is found most frequently amongst those who are great feeders on meat, especially if they also take much carbohydrate food, *e.g.*, sweets. Even dogs can become diabetic with such a diet. One of those animals was a large Bernardine dog, which was fed very richly with meat and sweets. Another was a poodle, whose sire and dam were related to one another as father and daughter. This animal was of weak mental development, and thus illustrated the consequence, as in man, of intermarriage. Diabetes is a frequent result in such cases. The children of diabetics very readily exhibit glycosuria, as we have shown in a paper published in the *Practitioner* several years ago. These children, after puberty, have a diminution of their tolerance for amylaceous food. Therefore, the practical lesson is to restrict the sweets in their diet. It is a fact not to be

<sup>1</sup> A lecture delivered before the Glasgow Medico-Chirurgical Society on 17th October, 1908.

denied that diabetes, like Graves' disease, has most frequently a hereditary basis. Graves' disease, as we have shown in previous works, stands in close relation to diabetes. Why do persons or animals who take much meat and sweets in their diet for years develop diabetes so frequently?

The cause of this is, that such a diet tends to alter those organs which play an important pathogenic rôle in diabetes, especially the pancreas and thyroid. The pancreas aids the digestion and assimilation of a diet of such a kind by certain ferments. But it has also been found by Sobolew and Professor Ebner that after abundance of amylaceous food the islets of Langerhans in the pancreas can be found in animals diminished or otherwise altered. On the other hand, meat food in quantity is apt to produce important alterations in the thyroid, on the basis of the experiments by Chalmers Watson, of Edinburgh. The importance of the pancreas in diabetes is shown conclusively through the experiments of Professor Mering and Minkowski, who were able to produce diabetes in every dog whose pancreas was extirpated. Later on it has been shown, especially by Opie, Weichselbaum, and Stangel, as well as many others, that diabetes can be found also in cases where the secretory parts of the pancreas are not altered, and only that part of the pancreas is changed which was first described by Paul Langerhans in his *Thesis* of 1869. He described islets in the pancreas which have quite a different anatomical and histological structure from the other parts of the pancreas. It is true that there have been found many cases of diabetes where these islets were apparently not changed, although we must remember that the finding of an apparently intact glandular formation does not show that this gland has been producing its internal secretion during life. As shown by Pawlow, the pancreas secretes upon nervous stimulation, and after death it is difficult to find if these nervous impulses have been acting faultlessly, and whether an internal secretion has been produced which could have checked the onset of diabetes.

Besides the pancreas, the thyroid can be brought into etiological relation with diabetes. We have shown in a monograph, published in Berlin, and later in Paris, that diabetes, or glycosuria, very frequently develops in all those conditions where there is a hyperactivity of the thyroid gland, as in Graves' disease, but only when the disease is not too advanced. It has been already noted by Professor Von Noorden that there is in Graves' disease an extraordinary tendency to alimentary glycosuria. Glycosuria is also present

with great frequency in infectious diseases, after mental emotions, and after different toxic agencies; and, as shown by many authors, the thyroid gland is altered in the above conditions. As we have found, glycosuria of diabetes is increased during menstruation and pregnancy, and this may be due to the well-known relations between the ovaries and the thyroid, which in these conditions can be frequently observed to be distinctly enlarged.

We have been able to prove our assertions by experiments. Together with Professor Minkowski, then at Cologne, we have made dogs diabetic through extirpation of the pancreas, and then after a diabetes of several days' duration we have removed the thyroid gland. It was interesting to note that the microscopic specimens of these thyroids show a considerable dilatation of the vesicles of the thyroid with a very large amount of colloid substance. Especially was there an enormous difference between the thyroids of two dogs of the same litter; one was diabetic and the other normal. The picture of these specimens can be seen in the *Transactions of the London Pathological Society* (1906, vol. i), and also in a communication to the Paris Biological Society (1907, 25th March). It is of importance that each of three diabetic dogs had lost its glycosuria two days after the thyroid was extirpated.

Glycosuria is very seldom found with a degenerated condition of thyroid in myxœdema, quite contrary to its frequency in the opposite condition in Graves' disease. In the few cases of myxœdema where there was glycosuria, either thyroid extracts have been given, or there was no real myxœdema. It speaks for the relation of the thyroid glands to diabetes that thyroid extracts can produce glycosuria and even diabetes.

Besides the thyroid, also the adrenals seem to play an important rôle, for it has been found by Blum that adrenalin can produce glycosuria when injected into animals.

We see, thus, that three of the ductless glands have a pathogenic rôle in diabetes, but also the other ductless glands can be much altered. Alterations of the ovaries produce amenorrhœa; of the testicles, impotency; of the liver, hypertrophy. As we have shown frequently in previous communications, the different ductless glands stand all in close relation to one another. When one of these is altered the others more or less invariably follow.

To treat diabetes rationally we must prevent it. As long as there is only alimentary glycosuria we may have some

chances to cure such a condition and to prevent diabetes. For very often diabetes begins insidiously in a sneaking and creeping way. After previous alimentary glycosuria, with traces of sugar, this may go up gradually to 1 per cent, and later much higher. After nervous emotions, sometimes it may at once jump up to a considerable extent.

Thus everything depends upon recognising the initial stages. Unhappily, this is very frequently overlooked, and hundreds of diabetics in the early stages are not recognised. Therefore, it should be a maxim for every physician to examine the urine of each patient, not only the urine of 24 hours, but also after giving a test dinner consisting of considerable quantities of sweets and meat. Two hours after such a test dinner, considerable quantities may be found, when before no sugar was present. Thus, the physicians of life insurance companies may save them from very heavy losses, the insurance of such persons often being very risky. As soon as the quantity of sugar rises above 0.1 to 0.2 per cent, anti-diabetic diet should be given, except in cases of alimentary glycosuria, where the percentage of sugar does not rise after the test dinner. But this must be rational, and never so severe that even a small piece of Graham bread should not be allowed. Variety in diet is a great boon to diabetic patients. To moderate amounts of meat, green vegetables, a few eggs (unless there is distinct albuminuria), kefir or koumiss of the third day should be added, with a certain amount of sour cream. One to two oranges, which contain only minimal amounts of glucose, should be given. It would be advisable not to give too much meat, for it might stimulate the organs which are provoking glycosuria. It has also been found by Von Noorden that after much meat in the diet, even light cases of diabetes might turn into severe cases, and especially in severe cases have we seen deleterious results of too much meat in the diet. Such patients feel immediately better after the meat has been reduced, or entirely taken away for a few days. As they said themselves, they felt much lighter and quite different. It is best to give meat only once a day—to the midday dinner. Graham bread, in certain moderate quantities a day, should never be forbidden. Certain fruits that contain little of glucose—like apples, peaches, not too ripe apricots—could be given stewed, as then the sugar enters in the "gravy." There are some manufacturing houses which are producing, wholesale, fruit prepared in such a way.

As a rule, the diet could be more severe in light cases, and be more lenient in severe cases, especially in cases of young

persons like children. In such cases cream, and also milk, in certain quantities could be given. In severe cases it is not so much the sugar as the diacetic acid which should occupy our attention. This substance can easily be demonstrated by a few drops of a solution of perchloride of iron in a test-tube of urine. When the reaction of this test shows us a Bordeaux-wine colour, diacetic acid is present in considerable quantities, and then it would be advisable, in order to avoid, if possible, acid intoxication, to give as much as 4 drachms of bicarbonate of sodium a day in some alkaline water, distributed in several doses, to be taken after meals.

At the same time, it will be advisable in most cases to allow at least about 3 oz. of carbohydrates a day—best in the form of milk, or oats, or rice, or potatoes—as it has been found, after Hirschfeld, that such an addition to the diet may be able to cause the disappearance of diacetic acid and acetone from the urine.

The alkali should be given already before the above-mentioned reaction is present; best would be to begin as soon as acetone is found in the urine in distinct quantities. In such severe cases, severe diet, as a rule, could be deleterious, and it is certain that many cases of slight diabetes may turn into the severe form after an exclusive meat and fat diet with green vegetables only.

Professor Von Noorden and others have seen good results in such cases from a vegetarian diet with oatmeal.

Butter should always be fresh, for rancid butter may contribute to the development of acidosis.

There are many drugs recommended; but there is no drug that can make sugar disappear without dieting at the same time. Opium and codeine are certainly the most efficacious, but they can be given only for a certain length of time, generally for a short time only.

The alkalies have been much vaunted since old times; and, indeed, certain alkaline waters can give good results. In a number of cases of diabetes we have had good results from the serum of animals whose thyroid has been removed previously. We have related a series of such cases in our above-mentioned monograph, and also lately in the *Therapie der Gegenwart*, of Berlin (November issue). But only such cases will answer to such treatment—those who are very nervous, excited, and suffer from insomnia; especially has this latter symptom been improved in every case.

We have been driven to this treatment by the observation that diabetes often presents nearly all the symptoms of

Graves' disease, against which this serum has been recommended by its inventor, Moebius. Lanz has seen good results against this disease from the milk of goats whose thyroid was extirpated, and Hector Mackenzie has also published quite recently similar cases.

Many diabetics show symptoms similar to Graves' disease; and, on the other hand, in Graves' disease, after previous hyperactivity of the thyroid, its exhaustion may follow with symptoms of a myxœdematous condition. Thus, in severe diabetes, there are often a series of symptoms of a myxœdematous condition—generally in cases where diacetic acid is present in quantity.

We had recently such a patient under treatment, and we were surprised to find that a large amount of diacetic acid had disappeared two weeks after we had given thyroid extracts, beginning with two a day and rising to four a day. It is interesting to note that not only have these large doses been well tolerated, but also all the conditions of this patient—who showed symptoms of a very serious condition (he was not yet 30 years old)—have greatly improved. In another case with much diacetic acid and gangrene of the foot, seen in the ward of Dr. H. Vetlesen, in Christiania, there was a diminution of the diacetic acid after a few days' treatment; but, unhappily, the gangrene proved fatal. In a third case, also, acetone disappeared after similar treatment. We think thyroid treatment to be indicated only in severe cases with diacetic acid, and contraindicated in light cases. The above-mentioned case of very severe diabetes has so much improved that, as his physician, Dr. Billing, of Wara, in Sweden, wrote, several months after the return of the patient to his home, he was surprised at his condition.

Let us hope that it may be really possible to prolong life through such treatment, even in the severe cases of diabetes which, until now, have been invariably doomed to death.

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THE RECORD OF A YEAR'S WORK IN THE ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.<sup>1</sup>

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It ought, first, to be explained that the title of this paper is not strictly correct, since only those cases in which major operations were performed are recorded. Manifestly, considerations of time and space forbid the recital or tabulation of the cases—a very large number—treated either medically or by such minor operations as curetting or colporrhaphy. In addition, it must be noted that the number of operations and the number of patients bear no correspondence. In the majority of cases more than one operation was performed on the same patient, as can be understood when it is remembered that in the wards there were many sufferers from such conditions as these—rupture of the perineum, relaxation of the vaginal walls, laceration and eversion of the cervix, endometritis, retroversion and prolapse of the uterus, chronic salpingo-oöphoritis, extensive intestinal adhesions, and even diseased appendix. The victims of such complicated and widespread disease were treated either at once or in two stages. Usually it was found possible to save a double anæsthetisation, and although the series of operations occupied a considerable length of time, yet, with experience and frequent practice, one learns to perform them more quickly than would at first appear to be possible. After anæsthetisation, the patient was placed in the lithotomy position, the vagina thoroughly cleansed and disinfected, the cervix dilated, usually to Hegar No. 10, and the uterus curetted. If the cervix was the seat of chronic glandular hyperplasia, and of long-standing lacerations, it was amputated; in less severe cases it was repaired. Colporrhaphy, anterior or posterior, or both of these, followed, and then came one of the various methods of perineorrhaphy. The vaginal operations having been finished, the patient was placed in the dorsal position, the abdomen opened, and then the Trendelenburg attitude assumed. Adhesions, if present, were separated, the ovaries,

<sup>1</sup> Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 19th February, 1908.



tubes, and appendix treated, ventrofixation or ventrosuspension performed, and the task completed by closing the abdominal wound in three layers. It is evident, therefore, that in many patients five or six operations were performed, each of which was absolutely necessary if a good and lasting result was to be expected. No attempt has been made to calculate the exact number of operations performed.

During the last twelve months, then, there were 103 patients treated by me in the wards under my charge in the Royal Samaritan Hospital, for whom it was found necessary to open the peritoneal cavity by either the anterior abdominal or the vaginal route. It may be well, first of all, to tabulate the conditions for which these operations were performed, the operations themselves, and the mortality-rate, and afterwards, to consider such as were of special interest. (See table.)

Abdominal hysterectomy was performed on nineteen occasions, all successfully. Seventeen of these operations were on account of fibromyomata. Some were of great severity and difficulty, one especially in which the tumour was universally bound down by, and embedded in, adhesions. It was fixed and immovable, the bladder rose on its anterior surface to almost the level of the fundus uteri. After dividing adhesions, removing the appendix, and freeing and removing the Fallopian tubes, it was even then found impossible to liberate the mass without running serious risk of rupturing blood-vessels, ureters, or coils of intestines. The capsule was therefore divided, and the tumour ultimately removed, and in the *Journal of Obstetrics and Gynecology of the British Empire* (July, 1907) I entered into a full consideration of the treatment of such cases—frequently regarded as inoperable—by the method which I adopted. Another, and even more unusual and interesting case, was that of a fibromyoma developing from the cervix, and attaining the extraordinary weight, for a cervical fibroid, of 17½ lb. The body of the uterus was quite unaffected by fibroid degeneration, and was perched upon the anterior surface of the tumour, which grew upwards from the posterior and median portion of the cervix. It was most embarrassing to find, after opening the abdomen, that there was no pedicle to this heavy, solid, fixed tumour, and I agree with Howard Kelly, who says in his *Operative Gynecology* that “these are the cases which are the hardest to handle.” He adds that they “give the highest mortality,” and, though my patient made a perfect recovery, I can well appreciate the danger attached to operation in large subserous fibroid tumours of the cervix.

Operation and Disease.	Total.	Mortality.
<i>Hysterectomy (abdominal)—</i>		
Fibromyoma of body of uterus, . . . . . 15	19	...
Fibromyoma of cervix of uterus, . . . . . 1		
Fibrocystic tumour of uterus, . . . . . 1		
Double pyosalpinx and pyometra, . . . . . 1		
Carcinoma of cervix, . . . . . 1		
<i>Myomectomy—</i>		
Fibroid tumour, . . . . . 1	2	...
Fibroid tumour (intramural) with pregnancy, . . . . . 1		
<i>Hysterectomy (vaginal)—</i>		
Carcinoma of body and cervix of uterus, . . . . . 2	2	...
<i>Hysterectomy and Cæsarcan section—</i>		
Carcinoma of cervix and full-term pregnancy, . . . . . 1	1	1
<i>Ovariectomy—</i>		
Simple multilocular ovarian cysts—		
Bilateral, . . . . . 2	5	...
Unilateral, . . . . . 3		
Gangrenous cyst with twisted pedicle, . . . . . 1	1	...
Papilloma of ovary, . . . . . 1	1	1
<i>Salpingo-oöphorectomy—</i>		
Chronic salpingo-oöphoritis—		
Bilateral, . . . . . 10	17	...
Unilateral, . . . . . 7		
Abscess of ovary, . . . . . 1	1	...
<i>Salpingotomy—</i>		
Pyosalpinx—		
Bilateral, . . . . . 1	1	1
Unilateral, . . . . . 2	2	...
Hydrosalpinx, . . . . . 1	1	...
<i>Removal of sessile cysts of the broad ligament,</i> . . . . . 3	3	...
<i>Ventrofixation and ventrosuspension—</i>		
Retroversion, . . . . . 11	11	...
Prolapse, . . . . . 20	20	...
<i>Laparotomy for extra-uterine pregnancy—</i>		
Full term, . . . . . 1	1	...
Tubal abortions and ruptures, . . . . . 5	5	...
<i>Laparotomy and drainage—</i>		
Purulent peritonitis, . . . . . 2	2	...
Pelvic abscess, . . . . . 1	1	...
<i>Laparotomy—</i>		
Tubercular peritonitis, . . . . . 3	3	...
<i>Radical cure for ventral hernia,</i> . . . . . 2	2	...
<i>Uncompleted operations, Laparotomy—</i>		
Cancer of ovary, intestines, &c., . . . . . 2	2	...
	103	3

I showed the tumour at a meeting of this Society, and read notes of the case. Among the uterine tumours was a beautiful example of the fibrocystic variety which had, on first examination by abdominal palpation, at once suggested the presence of a multilocular ovarian cyst, so very evident was the fluid. The average age of the women who were operated upon was 40 years—the oldest was 49, and the youngest 30. The symptom which most commonly led to the necessity for radical operation, was hæmorrhage, and several of the women were terribly blanched. In some instances pressure symptoms also played important parts in determining upon the performance of hysterectomy. In every case the recoveries were rapid and uneventful, even when there had been serious difficulties in operation supervening upon long-continued previous ill health, and in no class of cases did one feel more amply repaid for all that had been done for the patients. My experience of hysterectomy for fibroids has taught me that the good effects are permanent in the vast majority of cases, and the altered appearance of the patients bears eloquent testimony to the benefits which have resulted. It is unfortunate that even at this date so many medical practitioners urge expectant treatment in cases of fibroid tumours of the uterus, in which such a symptom as hæmorrhage is draining the strength, and that so many women wearily struggle on for years under the burden of ill health, when what is now a comparatively safe operation would give so much relief, and help to make life worth living.

The abdominal hysterectomy for double pyosalpinx and and pyometra was successful. Total extirpation was forced upon me after I had opened the abdomen, as the uterine wall contained an abscess. The patient did well and remained well. In the panhysterectomy for uterine cancer, although I removed as widely as possible, and although the patient's condition improved wonderfully, and she left hospital well coloured and stout and in good spirits, yet, even then, a month after operation, there was suspicious hardening in the vaginal wall at the seat of the incision. I must confess that at no time had I regarded the case as a good one with respect to ultimate chances of cure.

Myomectomy was performed on two occasions upon patients respectively 37 and 36 years of age. This is the ideal operation in women under 40, and in subperitoneal fibroids where there are not more than three or four. While it preserves the possibility of conception, yet it is not so safe, as a rule, as hysterectomy, on account of the liability to

after-hæmorrhage and sepsis, and its field of usefulness is, therefore, somewhat circumscribed.

The elder of these two patients had been married for six years, had miscarried three times, and had carried one child to full term. The labour at this birth had been very difficult, and version was performed; but the child died. Dr. Gibson, Baillieston, who attended, recognised the presence of the tumour obstructing the passage of the child, and sent her to me for advice. On examination, the pouch of Douglas was found to be filled with a large, irregular mass, which I took to be an intramural fibroid tumour of the uterus. It seemed to be part and parcel of the uterus, and moved with it. Hysterectomy was, therefore, expected; but after opening the abdomen I found the uterus normal in size, with a hard tumour attached to its fundus by a narrow pedicle. It lay behind, and closely attached to, the uterus, and was fixed by dense adhesions to the posterior pelvic wall, and to coils of intestines. After a little trouble I removed it. The tubes and ovaries were normal, and there is, therefore, every prospect of a happier ending to the history of this case than had at one time seemed to be possible. The tumour was a fibromyoma, which was undergoing necrotic changes, and contained numerous cavities filled with caseous material. This was a typically favourable case for the performance of myomectomy. The tumour was pedunculated, and attached by a not very broad pedicle to the uterus, and, of course, it was subperitoneal.

The second example of myomectomy was very different. The patient, 36 years of age, had two children, the second born twenty-one months previous to her admission to hospital. Ever since then she had suffered from menorrhagia, and had been conscious of the presence of an abdominal tumour. But in April menstruation ceased, and when I saw her in September pregnancy had advanced to the fifth month. She was then very ill, suffering from breathlessness, palpitation, and a feeling of weakness and exhaustion. The abdomen was distended by a large tumour composed of two parts, which were of very different consistence. The lower part was soft, and was readily made out to be the pregnant uterus; the upper was firm and solid, and was evidently the fibroid growth in the muscular wall near the fundus. Surgical interference was assuredly inevitable. At the fifth month the abdomen was as distended as if pregnancy had gone to full term. There were two measures to be considered after we had determined upon the necessity of interference. The first was

to induce abortion, and later on perform myomectomy or hysterectomy; the second, to attempt to remove the tumour without interfering with the pregnancy. I chose the latter, and enucleated the tumour. It was intramural, the blood-vessels and sinuses were very dilated and engorged with blood, so that a large cavity was formed, and alarming hæmorrhage occurred. I stitched up the cavity in layers with deep sutures of catgut, and joined the peritoneal edges closely. On the following day labour pains commenced, and in a short time a five months' foetus was expelled. Convalescence was rather slow, but was completely satisfactory, and the patient is in good health now.

Myomectomy during pregnancy is not an operation to be undertaken lightly. Before the third month, gestation should be interrupted, and the tumour treated later. Myomectomy at any time during pregnancy is most safely performed when the tumour is subperitoneal, and can be removed without much wounding of the uterus and consequent dangers of hæmorrhage, sepsis, or abortion.

*Vaginal hysterectomy.*—Of all the many cases of uterine cancer which I saw last year at the hospital, it is regrettable that in only three was there the possibility of operation; and even in two of these one felt that they were having only "sporting" chances of recovery. In all the others the disease had advanced to such an extent that the most daring and optimistic would have been compelled to acknowledge the limitations of surgery. I can honestly say that I did not refuse to operate upon any patient whose condition held out any reasonable prospect of success. Even when ultimate cure is evidently impossible, I operate to give even temporary relief to the symptoms, and to permit the patients to be cheered by hope for some happy months or even weeks. But in the majority of the cases seen in hospital practice, the disease has been present for some months, and, on examination, a foul, ulcerating mass can be felt taking the place of the cervix, the vaginal walls are implicated, and the body of the uterus fixed. It is lamentable that so frequently cancer of the uterus is allowed, either by the patient or the doctor, to pursue its ravages undetected until the symptoms become so serious that the disease is unmistakable—and incurable. Cancer of the cervix is, unfortunately, much more common, and develops much more rapidly, than cancer of the body of the uterus. None of the latter class came under my care in hospital work during last year, and of the three not too far advanced cases of cervical carcinoma I operated upon one by

the abdominal route—already mentioned—and on the other two by the vagina. All made good, immediate recoveries. Certainly, vaginal hysterectomy is, as an operation, most satisfactory as regards prognosis at the time, and scarcely any shock or discomfort ensues. Even in cases where it is certain that metastasis has taken place into the pelvic glands, and the disease has passed beyond the hope of radical cure, palliative hysterectomy should be performed if we feel sure that its benefits will not be overbalanced by its dangers. However, early diagnosis is the goal to be striven for, and among women, as well as among the members of the medical profession, the knowledge ought to be widely diffused that irregularities of uterine hæmorrhage or its reappearance one, two, or three years after the menopause deserve immediate investigation.

*Hysterectomy and Cæsarean section.*—This case was of so great rarity and interest that I am tempted to record it in some detail. The patient, 36 years of age, was, when she was about six months pregnant, sent by Dr. Macleod, Barrhead, for my opinion as to the course of treatment which ought to be adopted, in view of the very evident and palpable fact that she was suffering at the same time from advanced carcinoma of the cervix. Nine children had been born to her in ten and a half years—very rapid child-bearing. The last had been born eighteen months previously, and for four months after the birth there was amenorrhœa, followed by a more or less continuous bloody discharge. Examination disclosed the cervix converted into an indurated, ulcerated mass which bled on the slightest touch and poured out a profuse, foul-smelling discharge. It seemed almost inconceivable that conception could have occurred; but there could be no doubt that it had, as movements were readily felt, and the fœtal heart sounds were distinctly audible.

The question now was, What operation should be done, and when should it be done? There appeared to me to be three courses which might be followed—the first, to remove at once the pregnant uterus and the contents; the second, to endeavour to empty the uterus by the natural passages, and, later on, remove it; and the third, to delay till nearer full term, and then perform Cæsarean section, following this up by pan-hysterectomy. I chose the last of these plans, both because I believed that the mother was certainly doomed, no matter what was done, and because it seemed to me that the child's chance of living was entitled to consideration. On 12th August, therefore, the woman was admitted to hospital.

Bleeding had been steadily occurring until six weeks before admission, and she was very anæmic. On examination, the fungating mass previously felt was found to have grown larger, and the cervical canal was obliterated entirely. The vaginal walls were widely implicated, and the parametrial tissues felt matted and dense. A week later, when it was decided that the pregnancy had gone well beyond the eighth month, the operation was performed. First of all a wide incision, taken as far as possible from the disease, was made in the vaginal walls round the cervix, and as much separation of tissues was made as was possible. As was to be expected, smart hæmorrhage resulted from the distended blood-vessels. Abdominal Cæsarean section was then performed in the usual manner, the child being easily extracted; and this was followed by complete removal of the uterus, including the cervix, the ovaries, and the tubes. There was somewhat free bleeding on the left side, but it was thoroughly arrested, and the patient was again in bed an hour and a half after the beginning of the operation. The child was small and feeble, and died on the next day. The mother kept marvellously well for five days, and we became quite hopeful of her immediate recovery. On the fifth day she took nourishment, she felt comfortable, and slept at intervals; the temperature was 100° F. But in the evening, about eight o'clock, she quite suddenly complained of faintness, she rapidly collapsed, the respirations became irregular, and death ensued in twenty minutes after the first symptoms were noticed.

On *post-mortem* examination, the abdominal cavity showed no evidence of sepsis, with the exception of a very small amount of sero-purulent exudation in the neighbourhood of the divided broad ligaments. The liver, however, was in a condition of acute fatty degeneration, and Dr. Galt, the pathologist, informed me that this state of the liver is frequently associated with cases of sudden deaths. The heart was flabby and fatty, and Dr. Galt's opinion was that death had been caused by the fatty degeneration of the heart and liver supervening upon the exhausting discharges, and the general infection from the sloughing cancerous mass. Microscopically, the cervix presented the appearance of squamous-celled carcinoma, and hardly any normal cervical tissue was left.

It was disappointing to lose the patient when matters seemed to be progressing so favourably, though it was a great consolation to find that sepsis was not the cause of the death.

I still think that the best was done in the case, and if only a very little better fortune had been granted, success might easily have followed, though it is impossible to believe that permanent relief would have been afforded to the mother.

Perhaps it would have been as wise treatment to have ignored the foetal life, and to have operated when I first saw the patient, by clearing out the uterus forcibly by the natural passages, and then performing vaginal hysterectomy, and this, I think, I would recommend in any similar case if a prolongation of the mother's life were urgently demanded. At the later stage, Cæsarean section alone would have been too dangerous on account of the liability to septic infection, and, therefore, total extirpation had to become the operation of election. Fortunately, cancer of the cervix is a rare complication of pregnancy.

*Ovariectomy.*—I need hardly refer to the five examples of multilocular ovarian cysts, as, with one exception, they presented no unusual features, and all were uneventful in their recoveries. But in this one exceptional case the pedicle had become rotated, and, the blood-supply having been cut off, the cyst was gangrenous. The patient was 62 years of age, married, but a nullipara. Two years previously she had become aware that a "lump" was forming in her lower abdomen, beginning in the left side. It gradually grew larger and compelled her to seek advice. At intervals attacks of pain occurred, sometimes very sharp and severe, and, as time went on, these became more frequent and more acute. When the patient came to hospital she was thin, sallow, and looked as if she were in the later stages of cancerous disease. The arteries were atheromatous. The abdomen was bulged by a very hard mass, about the size of a football, which could be moved about freely in all directions. The diagnosis was somewhat obscure, and that of a solid tumour of the ovary appeared the most probable. At the operation a dark tumour presented, which proved to be a cyst of the left ovary. The pedicle was twisted, and the result had been to fill the cyst with blood-clot, and this gave the feeling of stony hardness. Gangrene had begun; the odour was unmistakable. The cachectic look was explained. Recovery was good; in a short time the sallow skin had cleared up, and the woman left hospital much younger in appearance than when she entered it.

The case of malignant disease of the ovary deserves special notice. The patient was 49 years of age, and had suffered from abdominal swelling for fifteen months, and from bloody



discharges from the vagina for nine months. She was a multipara, who had always enjoyed good health until the onset of this illness. I saw her in consultation at her own home in the country, and although she looked, and was, extremely ill, yet I counselled operation. For five months she had suffered from the hæmorrhage without seeking advice. After then the uterus was curetted, but without giving relief. She had been losing flesh, and was so unable to undertake the slightest exertion, on account of exhaustion and distressing dyspnoea, that for a month she had been absolutely confined to bed. The complexion was earthy, the mucous membranes anæmic, the temperature was 100°, the pulse 120, and respirations 28. The abdomen was filled by a large, fluctuating swelling, the greatest measurement being 43 inches. Removal to hospital tired her very much, and improvement did not come on even after a day's rest. On the day before operation the pulse-rate varied between 130 and 140, the breathing was very embarrassed, vomiting was a troublesome symptom, and no sleep could be obtained. It was, therefore, apparent that if anything were to be done it must be done at once, and on 30th August I operated. A large, dark-purple cyst was removed with comparatively little difficulty. It contained black fluid of the appearance of venous blood. In the evening the left leg became œdematous, and none of the symptoms were relieved. Vomiting was incessant, the pulse remained very rapid and feeble, and although every therapeutic measure was employed—saline transfusions, stimulant and nutrient enemata, hypodermic injections of strychnine, &c.—the exhaustion became greater and greater, and she died on the third day. The prognosis had been unfavourable from the first, and operation was really undertaken in the spirit of a forlorn hope. Death would have certainly occurred in a few days even had no operation been performed, and it cannot be said that it was caused by the operation. It was actually due to the delay in operation. At the autopsy it was found there was, as was expected, not the slightest appearance of sepsis, and no embolus was lodged in the pulmonary arteries. The liver was fatty, the heart pale and degenerated, and on the interior surface of the stomach there were between twenty and thirty ulcers which, according to Dr. Galt, were not the result of *post-mortem* changes. It was evident that the immediate cause of death was exhaustion, due to the immense loss of blood and to the sickness which had given so much distress.

The pathological report of the tumour bore that it was "a large ovarian cyst which shows much necrotic papillary tissue within at one part. The fluid from the cyst shows dilute blood with corpuscles, in most cases normal in appearance, though some are large and granular."

In this case it was impossible to diagnose the exact condition before operation. The papillomatous growths projected into the interior of the cystic tumour, and, of course, could not be recognised by palpation; none grew on the outer surface, and there was no implantation upon the peritoneum. No ascites was present, on account, probably, of the normal condition of the peritoneum. The moral to be drawn from the study of a case such as this is, therefore, very evident, and it is, that as it is clearly impossible to diagnose between simple multilocular cyst and papillary tumour growing into the interior of an ovarian cyst, all cystic tumours of the ovary ought to be operated upon by removal as soon as they are discovered. There can be no doubt that earlier operation would have saved this life.

*Salpingo-oöphorectomy.*—In eighteen instances removal of diseased appendages was done as a primary operation. All the patients recovered. Many of the operations were very severe, chiefly on account of adhesions, and, in my opinion, fully justified the procedure. In every instance medical treatment more or less prolonged had been undergone, pain had usually been such a constant and distressing symptom that patients, friends, medical advisers, all willingly assented to the radical operation, and usually the functions of the ovaries had been in abeyance for years. No case was undertaken without the most serious consideration, and as much conservative treatment was adopted as was found possible. Every attempt was made to avoid bilateral oöphorectomy, especially, of course, in the women under 40. No patient gets more anxious consideration from a conscientious surgeon than one suffering from chronic salpingo-oöphoritis in all its varieties. The neurotic element so often complicates such cases, and pain so frequently persists after operation, that the greatest discrimination is required in making a suitable selection. Prolonged after-rest is essential to ensure good results, and we never permit our hospital patients to rise from bed for, at the shortest, four weeks after operation, while we also endeavour to impress upon them the necessity of refraining for a time from hard work after their return to their homes.

Radical operation in chronic disease of the tubes and ovaries

has been frequently condemned. I know well that inflamed tissues often become regenerated, and have seen many instances of this. I recognise the importance of the ovaries to the female organism, and I appreciate the fact that conservative surgery must always be the best surgery; but I have been convinced by too many examples that the class of cases we meet in large industrial centres, such as Glasgow and its surrounding towns, is frequently benefited by nothing less than radical treatment. This is a large subject, and I must end it by saying that too often the history of the cases proves that the starting-point has been a birth followed by septic mischief; and to better education of midwives and greater attention to the details of prophylactic asepsis must we hope for a diminution in the numbers of these often distressing cases.

One of the patients suffering from pyosalpinx died. She was only 22 years of age, and had been married for one year. As she had not become pregnant eight months after marriage, she went to a medical mission out-door dispensary, and, according to her own statements, she was there treated for sterility by the passage of dilators. This was continued once or twice a week for two months, at the end of which time she was suddenly seized with severe pain in the lower part of the abdomen. Poultices were applied, and treatment of this nature was administered for several weeks while she lay in bed. At last she was advised to go to hospital, and after her admission it was seen that she was in a dangerous condition. The temperature was no less than  $104.2^{\circ}$ , the pulse was correspondingly rapid, and there was excruciating pain in the pelvis. Death appeared imminent, and I operated as a *dernier ressort*. There was a double pyosalpinx, and pus lay between coils of intestine and in the parametrium. Collapse followed the operation, the pulse became very feeble, and the temperature fell to  $96.8^{\circ}$ . On the next morning it had risen to  $103^{\circ}$ , and death ensued in a few hours later.

This was a very sad case, and, if the history given was correct—and there was no reason to disbelieve it—it proves how dangerous is the performance of minor gynaecological operations in out-patient dispensaries, surgeries, or consulting-rooms when thorough asepsis of the vagina and cervix, or even of the instruments employed, must usually be impossible. It also throws a light upon the extreme desire for early pregnancy so frequently observed among women of the lower working classes, when we learn that a woman only 21 years

old will seek advice on account of sterility after a married life of a very few months.

Each instance of sessile broad-ligament cyst was interesting. The operations were not easy, but the recoveries were good.

Ventrofixation or ventrosuspension was performed upon thirty-one patients, seldom as a single operation, nearly always with others. Perhaps this appears to be a large number, but the fact remains that the conditions for which it was performed were very frequently encountered. Prolapse of the uterus was the principal complaint of twenty patients, and some of the cases were shockingly bad. The uterus was entirely outside the vulvar opening in some instances, and frequently the history was that the falling-down had existed for years. It is a mystery how some of the poor creatures had managed to maintain existence in their miserably uncomfortable position. Usually I kept them in bed for preliminary treatment—rest, hot vaginal douching, tampons, purgatives—and thereafter performed a long series of operations, as already described. All the patients recovered and left hospital much improved, locally and generally. Of course, one cannot speak of the ultimate results in last year's operations, and I hope to gather together on a future occasion cases extending over a much longer period for study and discussion. While one must admit occasional failures, largely owing to the women standing too long and lifting heavy weights, yet, in the main, ventrofixation, in combination with operations on the cervix and vaginal outlet, affords successful results in prolapse of the uterus; and similarly, many of the painful symptoms associated with intractable backward displacement of the uterus are relieved by ventrosuspension. But here, again, as in chronic salpingo-oöphoritis, childbirth plays the most important part in the etiology. Too early use of the forceps, failure to repair injuries to the soft parts, too frequent child-bearing, and other evident causes, all tend to produce undue relaxation of the vaginal walls and hernia of the pelvic organs. Some of these factors are clearly avoidable, and I cannot believe that in two or three more generations there will be a surgeon of the Samaritan Hospital still engaged in performing almost daily a wearisome series of repair operations. Surely, if we could dip into the future, there would be a happier time revealed to us in which a bad prolapse of the uterus would be spoken of as a rare example of the effects of ignorance and neglect, and as a reminder of the bad old times.

*Extra-uterine pregnancy.*—Six instances came to the

wards, one of them a full-term pregnancy. The patient, 26 years of age, had suffered, after amenorrhœa for a month, from a severe flooding, but had recovered, and in due time the signs and symptoms of pregnancy manifested themselves. No abnormal condition was suspected, and preparations were made for an ordinary confinement. However, when full term had nearly arrived, the fœtal movement ceased, and it soon became evident that the child had died. Shortly afterwards I was asked by Dr. Mowat to see the patient at her own home, and, if possible, to discover what had gone wrong. On examination I could with some difficulty push up the child, and then I felt the empty uterus below it. At the operation in the hospital the child, which lay transversely, was found to be enclosed in a sac composed of the layers of the broad ligament. Without any special difficulty this sac and the fœtus were removed, along with the placenta, which was situated on the breech. The operation was of surprising ease, and occupied less than half an hour. This was, of course, due to the fact that, in the time of the primary rupture of the Fallopian tube, the embryo had escaped downwards and between the layers of the broad ligament, and that no secondary rupture had occurred, the fœtus, with its placenta, developing there until the end of the pregnancy. The child, placenta, and cord were all of normal dimensions, and, had it been possible to have diagnosed the condition at an earlier date, a viable child could have been removed with ease. But, as already noted, the mother had no idea that the pregnancy was not normal in every respect, and did not seek skilled advice until movements had ceased for several days. She made a good recovery.

The remaining five examples of extra-uterine pregnancy followed the more usual course of such cases, and were treated in the early weeks of gestation.

*Laparotomy and drainage.*—Interesting histories are attached to all of the cases under this heading, but considerations of space and time forbid their recital. Those in which the infection was streptococcal in origin did well, and the patients made perfect recoveries. The tubercular cases were improved, one most markedly.

*The radical cure of ventral hernia.*—Two very extreme examples of hernia in the linea alba, as a direct sequence of previous abdominal section, were in the wards. One of immense size, and which had entailed great discomfort, was in an enormously stout, heavy woman. Seven years previously abdominal hysterectomy had been performed in

another hospital, and the hernia was stated to have begun almost immediately afterwards. Apparently the convalescence had been complicated by suppuration in the abdominal wall. I found great difficulty in dissecting out the connective tissue, and exposing the recti muscles, as they were so widely separated. Fat, to the weight of several pounds, was also removed, including almost all the great omentum, which was practically composed entirely of fat. The operation was scarcely concluded before vomiting began, and it continued without intermission for several days. The straining was excessive, and it was a marvel that complete tearing apart of the wound did not occur. In a day or two delirium came on, and on more than one occasion the patient rose out of bed. She was in hospital for over two months, but made ultimately a splendid recovery, and we dieted her to such good end that when she left us, with firm abdominal scar and showing no trace of hernia, she was, by comparison with her former massiveness, a slim and youthful-looking woman.

Of the two operations uncompleted—in reality more or less done for exploratory purposes—nothing need be said, except that in both patients it was established that the malignant disease from which they suffered had spread far beyond the bounds of successful interference.

*Mortality.*—There were three cases which ended fatally—all recorded in this paper—in the series of 103, which gives a mortality rate of 2.91 per cent. This is probably lower than the average in gynaecological hospitals, and the reports of the cases show clearly that the three deaths were unavoidable, and that the operations stood in no more direct relationships to them than did the purgative medicines which had been previously administered. It is, therefore, an encouragement to both medical practitioners and their patients to realise that modern methods of procuring asepsis and improved methods of technique have so largely robbed surgical treatment in gynaecology of its former dangers, and that, so far as the prospects of immediate recovery are concerned, sufferers from chronic inflammatory diseases, from ovarian or uterine tumours, or from distressing displacements, ought not to hesitate for too long a time before undergoing operation for their relief.

As regards the methods of operating and of the after-treatment, it is impossible to speak at this time, as the paper has already exceeded normal limits. Every separate case, in respect to previous history, causes predisposing to or directly producing disease, conditions discovered at operation, and the

after-results, was of surpassing interest and fascination, and to recall them to memory in this paper has afforded me great pleasure.

My grateful thanks are due to all whose assistance and co-operation were given so ungrudgingly, and most especially to the house surgeons, the sister, and the nurses of my wards.

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# ANEURYSM OF THE HEPATIC ARTERY: CLINICAL AND PATHOLOGICAL NOTES OF A CASE, WITH A REVIEW OF THE PREVIOUSLY RECORDED CASES.<sup>1</sup>

(*From the Pathological Laboratory, Western Infirmary, Glasgow.*)

By WILLIAM ROLLAND, M.B., CH.B.,  
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THE extreme rarity of this condition amply justifies the publication of the present case, but apart from this, certain points of interest are presented, especially in the etiology, which may add to our knowledge of this disease. That the condition is an uncommon one is shown by the fact that, after a careful search of the literature, only forty undoubted cases have been collected; this number excludes aneurysms of the pancreatic artery and of the coronary artery of the stomach, which are included by some writers among aneurysms of the hepatic artery, but includes aneurysms of the cystic artery, a branch more closely connected with the liver than those already mentioned. Much speculation has been indulged in regarding the etiology of the condition, and many widely different factors have been suggested. It will be seen that the symptomatology is a very definite one, but that it resembles so closely that of certain other commoner conditions as to render the diagnosis a matter of extreme difficulty.

*Extracts from clinical reports.*—Mrs. M'L., aged 46, a housewife, was admitted to the Western Infirmary, Glasgow, under the care of the late Sir Thomas M'Call Anderson, on 25th May,

<sup>1</sup> This publication formed the thesis which was awarded the John Reid Prize for Research in January, 1908.

1906, complaining of swelling of the legs and shortness of breath. Her illness commenced four years ago with dyspnoea, which gradually increased in severity. Œdema of the legs was first noticed three months ago. There has been no pain in any part of the body, nor has there been any hæmorrhage.

*Examination* shows considerable œdema of both legs. There is a large cicatrix with coppery pigmentation on the outer aspect of the left knee; the patient states, on being questioned, that this is the result of an eruption which has been present off and on for the last seven years. The urine is passed in normal amount. It contains abundant albumen and granular and hyaline tube-casts. The lungs show some hypostatic congestion at both bases. The heart is considerably increased in size, especially towards the left, the transverse measurement of the precordial dulness being  $7\frac{1}{2}$  inches.

The *diagnosis* was chronic nephritis, with hypertrophy of the heart. The symptoms gradually disappeared from the time of admission, and the patient made an uneventful recovery, being dismissed much improved on 29th June, 1906.

On 7th January, 1907, the patient was readmitted with a return of her previous symptoms. She states that shortly after leaving hospital her feet began to swell, and all her other symptoms returned.

*Examination* at this time reveals a condition practically similar to that which existed during the previous residence in hospital. There is no jaundice, but some bile pigment is detected in the urine. There is a considerable amount of free fluid in the abdominal cavity. There is no pain in the liver region.

*7th February, 1907.*—The patient has been improving daily. There has been no hæmatemesis or melæna. The anasarca is much less, and there is very little dyspnoea. At 6.15 P.M. to-day she complained of a sudden, severe pain in the right hypochondrium. She became extremely pallid, and the pulse was slow and very feeble. The respirations gradually became less frequent, and she died at 6.30 P.M.

The *post-mortem* examination was performed by the writer on 9th February, 1907.

The body is very emaciated. The lower limbs are œdematous. There is marked anæmia. On the outer aspect of the left knee-joint is a large cicatrix of a coppery colour; the cicatrix has more or less circular margins.

*Thorax.*—The serous cavities are normal.

*Heart.*—Markedly hypertrophied, both right and left ventricles participating. There is moderate dilatation. The



weight is 1 lb. 8 oz. The aortic and pulmonary valves are competent.

Diameter of aortic valve, . . . . .	1 inch.
Mitral, . . . . .	1·3 "
Tricuspid, . . . . .	1·5 "

Some atheromatous patches of small size on mitral cusps and in aorta. Coronary orifices clear. No endocarditis. Myocardium evidently healthy. In the left ventricle the endocardium is thickened, and there are some subendocardial hæmorrhages. The maximum thickness of the wall of the left ventricle is 1 inch, of the right ventricle 0·5 inch. There are large outstanding columnæ carneæ in the right ventricle. There is marked thickening and atheroma in the thoracic vessels of large and medium size.

*Lungs.*—Chronic bronchitis and emphysema. There is an old hæmorrhagic infarction, about half an inch in diameter, in the outer part of the left lower lobe; this is softened in part, and the softened material is seen microscopically to consist of pus containing pneumococci.

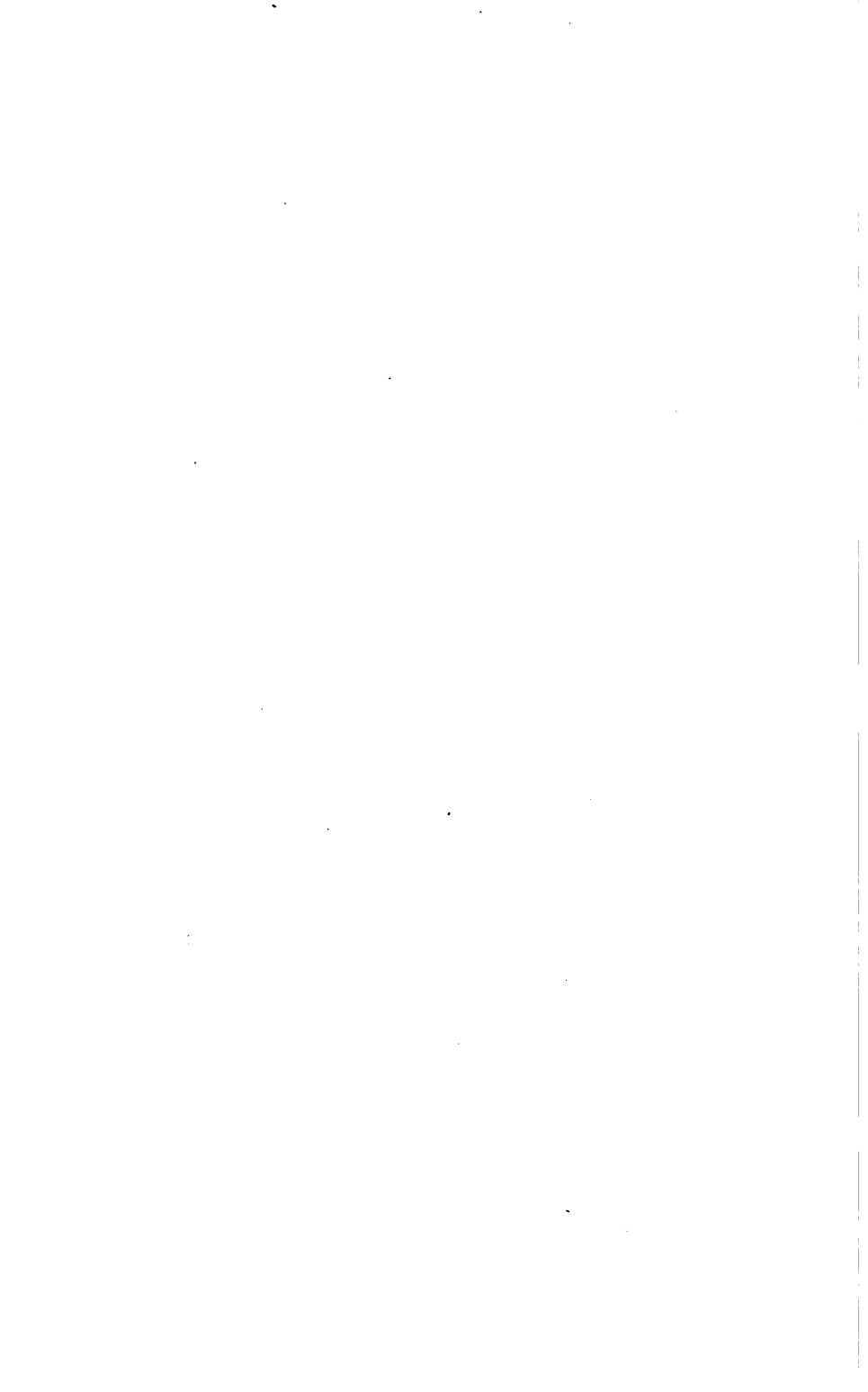
*Abdomen.*—The peritoneal sac contains 3 pints of bloody serum and clotted blood.

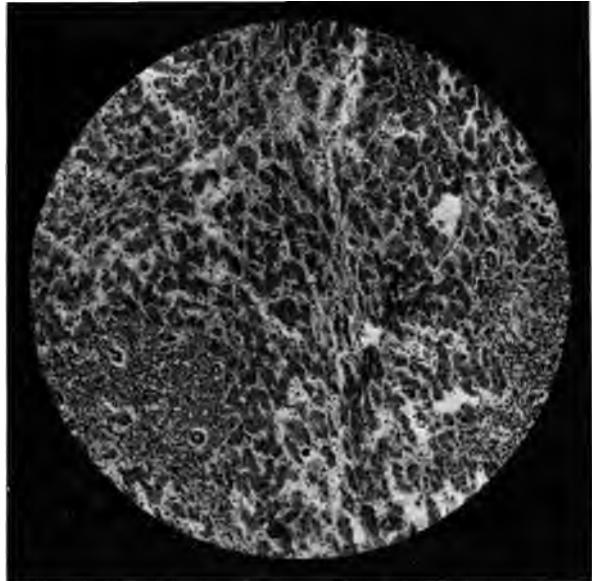
*Liver.*—Weight, 5 lb. It is of pale yellow colour, with red mottling in the centre of the lobules, and is evidently fatty. On the surface it is slightly irregular and granular in parts, but on section it does not appear cirrhotic. Numerous little elevated points, about the size of a pin point, are seen all over Glisson's capsule, and often aggregated into clusters. No gall-stones are found in the gall-bladder. In the centre of the under surface of the left lobe of the liver there is a deep ragged hole, from which the hæmorrhage has proceeded. Around this the capsule of Glisson has been stripped and raised into a blister, about 5 inches in diameter, occupying the greater part of the under surface of the lobe. An antero-posterior incision was made through the liver, traversing the rupture obliquely. Recent blood-clot was picked out of the rupture and the vessels examined, and finally, in the depths of the part of the rupture which remained in the left half of the liver, a true aneurysm of fusiform shape, about 2·5 cm. in length, by 1·25 cm. in diameter, was found. The vessel on which it was situated was traced back to the portal fissure, and identified as hepatic artery. A rupture, about 3 mm. long, was apparent in one side of the sac. The aneurysm is situated within the parenchyma of the left lobe of the liver (Fig. 1). The vessel from which it sprang is the



**FIG. 1.**

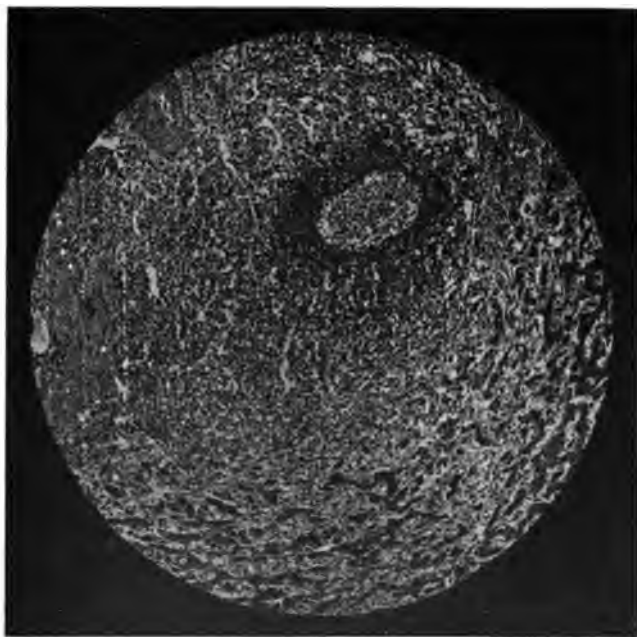
**Photograph of the ruptured aneurysm after dissection. The thin probe lies in the artery, the thick one in the rupture in the aneurysmal sac. The surrounding liver substance is torn. Glisson's capsule is extensively stripped from the surface.**





**FIG. 2.**

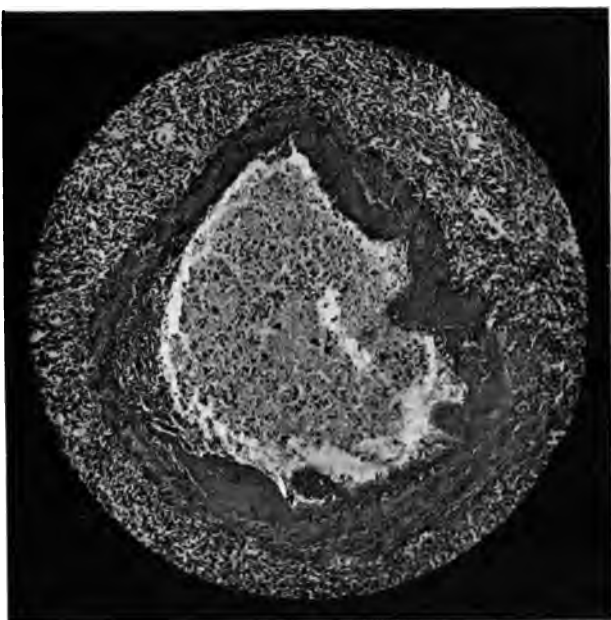
Showing the form of interstitial hepatitis which was present throughout the liver. ( $\times 50$ .)



**FIG. 3.**

A small branch of hepatic artery showing the changes in its wall and in the surrounding tissue. The lumen is occupied by a recent thrombus. Note the extensive periarterial proliferation. ( $\times 50$ .)





**FIG. 4.**

Section showing the vessel on which the smallest aneurysm was situated. The periarteritis and degeneration of the vessel wall are well seen. The lumen is occupied by recent thrombus, with, at the lower part, a portion of white thrombus. ( $\times 50$ .)



**FIG. 5.**

A section of hepatic artery showing the disease affecting one side only. The internal elastic lamina stands out as a black line, the section having been stained with Weigert's elastic tissue stain. The wall is much attenuated by invasion with granulation tissue, and the intima at the affected part is much proliferated. ( $\times 50$ .)



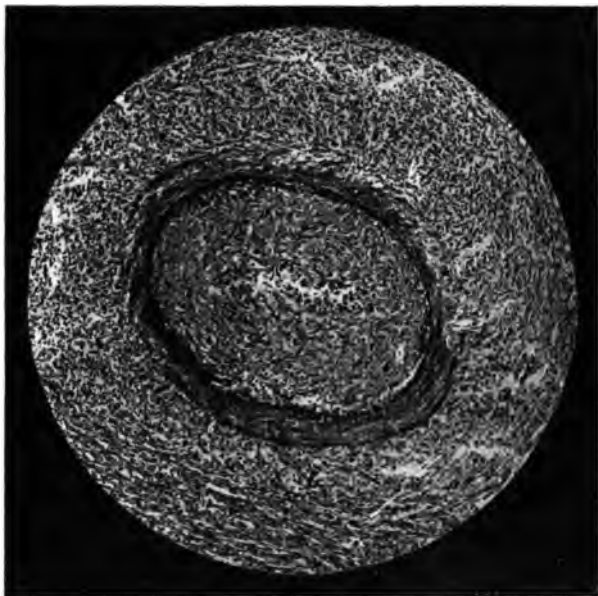


FIG. 6.

A vessel showing changes similar to the others, but in a more extreme degree. The wall is greatly thinned and very degenerate, and the lumen is completely obliterated by proliferation of the cells of the intima. Periarteritis is also well marked. Stained by elastic tissue stain. ( $\times 50$ .)

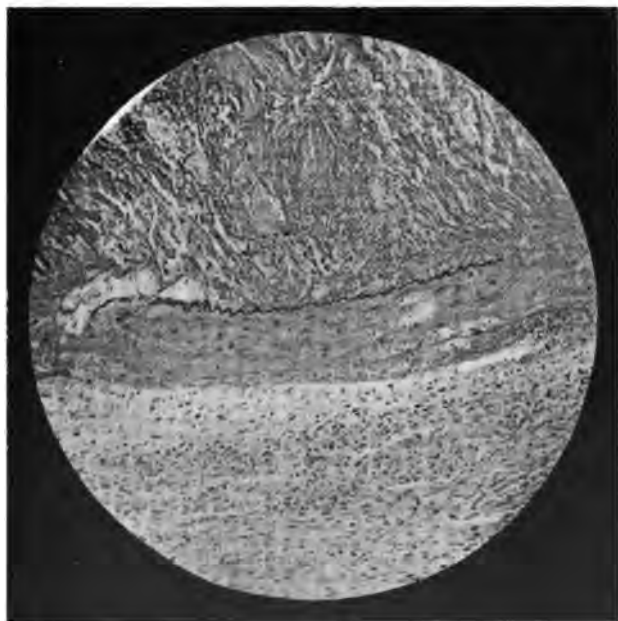


FIG. 7.

A section of part of the wall of the second aneurysm, showing a portion of diseased vessel wall entering into its formation. Above, the dense thrombus which filled the sac is seen, while below there is granulation tissue which surrounded the aneurysm. The internal elastic lamina is plainly seen as a sinuous black line. ( $\times 50$ .)





main branch to the left lobe of the liver. The aneurysm is situated 10 or 11 cm. from the bifurcation of the hepatic artery. The vessel at the point of rupture is barely 2 mm. in diameter. A small aneurysm, about the size of a pea, was found in the portal fissure close to the main trunk of the portal vein and hepatic artery; this was quite filled with dense clot. Another, about the size of a barleycorn, was found close to the main trunk from which the ruptured aneurysm sprang; this was also near the portal fissure, and was completely occluded by thrombus. Both of these small aneurysms were also intrahepatic. No other aneurysm was found in the abdominal vessels. The amount of atheroma in the abdominal aorta and large vessels of the abdomen is small.

*Spleen.*—Weight, 6 oz.; somewhat enlarged; soft; dark coloured.

*Kidneys.*—Well-marked subacute nephritis. Thick, irregular cortex. Slightly granular on surface. Vessels thickened.

*Suprarenals.*—Large and very yellow, as if fatty.

The *histological appearances* of the kidneys, lungs, and liver were investigated, when the following observations were made :—

*Kidneys.*—Cortex increased in thickness. Surface depressed irregularly at places, by fibrous bands. Increase of rather cellular fibrous tissue of patchy distribution, and accompanied by infiltration of lymphocytes and large hyaline cells. In some parts many glomeruli are aggregated together. Most of the glomeruli are of normal appearance, but many show varying degrees of fibrosis, affecting both the tuft and the capsule of Bowman. The tubular epithelium shows degrees of degeneration, varying from cloudy swelling to complete necrosis. The amount of catarrh is considerable, and in many parts evidences of compensatory proliferation can be seen. The renal artery shows some thickening of the media, with relatively increased fibrous tissue, but the tunica intima appears normal. The collecting tubules contain many hyaline casts. The appearances are those of a subacute nephritis, with early interstitial changes.

*Lung* (sections of infarction).—The sections show an infarction of some considerable duration; the pleura over it is thickened, and surrounding it is a layer of dense fibrous tissue; organisation changes are far advanced, and many large cells, full of hæmosiderin granules, are seen. The adjacent lung tissue shows much catarrh and some complementary emphysema. One part of the infarction is the

No.	Date.	Author.	Publication.	Age.	Sex.	Number.	Size.
1	1809	Wilson.	Lectures on Blood, etc., before R. C. of Surgeons, 1819, p. 379. (Specimen now in Surg. Hall, Edinburgh.)	50	M.	One.	Resembles heart in size and shape.
2	1821	Pitcairn.	Specimen in Museum of Surg. Hall, Edinburgh, 36-296 (evidently unpublished).	48	M.	One.	Hen's egg.
3	1833	Sestier.	Bulletins de la Société Anatomique, tom. viii, p. 80.	?	F.	One.	Hazelnut.
4	1834	Stokes.	Dublin Med. Journ., 1st series, vol. v, p. 401.	35	M.	One.	Large orange.
5	1834	Jackson.	Med. Mag., Boston, vol. iii, p. 115.	22	M.	One.	Pullet's egg.
6	1855	Lebert.	Anatomie Pathologique, tom. ii, p. 322.	30	F.	One.	Pigeon's egg.
7	..	Lebert.	Quoted by Uhlrig, Krankheiten der Arterien.	?	M.	One.	Hazelnut.
8	1856	Ledieu.	Journ. de. Med. de Bordeaux, Mars, 1856.	54	F.	One.	Hazelnut.
9	1858	Wallmann.	Virchow's Arch., Bd. xiv.	36	F.	One.	Child's head.
10	1868	Uhlrig.	Inaug. Diss., Leipzig, 1868.	48	M.	One.	Goose's egg.
11	1871	..	Specimen in St. George's Hospital Museum, VI, 86A (mentioned by Rolleston, Diseases of Liver, etc., 1904, p. 44).	35	M.	One.	Cricket ball.
12	1871	Quinke.	Berlin. klin. Wochen., 1871, p. 349.	25	M.	One.	Chestnut.
13	1875	Standhartner.	Ber. des Wiener allg. Krankenh., 1875.	23	M.	Two.	(1) Walnut. (2) Small nut.
14	1877	Ross and Oßler.	Canadian Med. Journ., vol. vi, July, 1877.	21	M.	One.	Small lemon.
15	1878	Borchers.	Inaug. Diss., Kiel, 1878.	17	M.	Two.	(1) 2·3 cm. in diameter. (2) 2·5 cm.
16	1878	Irvine.	Trans. Path. Soc., London, 1878, vol. xxix, p. 128.	45	M.	One.	Small almond.
17	1880	Drasche.	Wiener med. Wochen., 1880, No. 37-39.	27	M.	One.	Hazelnut.
18	?	Heschl.	Quoted by Drasche. Specimen in Gratz Museum.	56	F.	One.	Pigeon's egg.
19	1883	Weinlechner.	Aerztl. Bericht. der K. K. Krankenh. zu Wien, S. 269.	Young	M.	One.	?
20	1885	Chiari.	Prag. med. Wochen., 1885, No. 4.	33	M.	Three.	Largest. 2×1 cm.

Position.	Immediate Cause of Death.	Etiology.	Symptoms.	Post-mortem Appearances.
Left branch; intrahepatic.	Rupture.	?	?	?
Main trunk; extrahepatic.	Rupture into peritoneal cavity.	?	None.	?
Right branch; extrahepatic.	Exhaustion.	?	"Chronic painful affection of liver."	Gangrene of gall-bladder.
Main trunk; extrahepatic.	Rupture into peritoneal cavity.	?	Jaundice; hæmatemesis; slight pain.	?
Main trunk; extrahepatic.	Rupture into hepatic duct.	?	Pain; jaundice.	Phthisis pulmonalis; old carotid aneurysm.
Main trunk; extrahepatic.	Rupture into gall-bladder.	Embolic?	Pain; slight jaundice; hæmatemesis; melæna; anemia.	Old mitral endocarditis; old and recent pericarditis.
Right branch.	?	?	"Gastric disturbance."	?
Main trunk, just above origin of pyloric artery.	Albuminuria and general dropsy.	?	None caused by aneurysm.	Cavity quite occluded by very firm coagulum.
Main trunk, 7 mm. above subdivision.	Rupture into peritoneal cavity.	?	Very severe paroxysmal pain; jaundice; no fever.	Gall-bladder much distended.
Left branch; extrahepatic.	Rupture into peritoneal cavity.	Infective? (osteomyelitis). Atheroma?	Severe pain.	?
Main trunk; extrahepatic.	Rupture into peritoneal cavity.	Atheroma in aorta?	Dead on admission to hospital.	Adherent to small intestine.
Right branch; intrahepatic.	Exhaustion from loss of blood.	Infective?	Severe pain; hæmatemesis; melæna; jaundice; fever.	Pneumonia; no rupture found.
(1) Right branch (2) Left branch.	Rupture of larger aneurysm into peritoneal cavity.	Infective?	Icterus; high fever (not due to aneurysm).	Suppurative mediastinitis; pleurisy; pneumothorax.
Right branch; extrahepatic.	Pyæmia.	Infective?	Those of pyæmia.	Double pleurisy; abscesses of liver.
Intrahepatic.	"Amputation of femur."	Infective? (osteomyelitis). Trauma?	Pain; icterus; hæmatemesis; melæna; fever.	Ruptured into hepatic duct.
Left branch; intrahepatic.	Hæmorrhage into stomach.	Infective.	Slight pain; hæmatemesis; melæna.	Stomach adhering to, and communicating with, abscess of liver; early cirrhosis of liver.
Right branch, 1.6 cm. beyond division.	Rupture into peritoneal cavity.	?	Severe pain; hæmatemesis.	
Main trunk, just before division.	Tuberculosis.	?	None.	
Main trunk.	Rupture into peritoneal cavity.	Infective?	?	Recent osteomyelitis of femur.
Ostic artery.	Rupture into gall-bladder.	Cholelithiasis.	Hæmatemesis; melæna.	Fistula between gall-bladder and duodenum.

No.	Date.	Author.	Publication.	Age.	Sex.	Number	Size.
21	1886	Caton.	Clin. Soc. Trans., 1886, vol. xix, p. 275.	40	M.	One.	1 inch in diameter.
22	1892	Hale White.	Brit. Med. Journ., Jan., 1892, p. 223.	18	M.	Two.	(1) Tangerine orange. (2) Slightly smaller.
23	1892	Sachs.	Deutsch. med. Wochen., No. 20, S. 443.	60	M.	One.	?
24	1893	Sauerteig.	Inaug. Diss., Jena, 1893.	31	M.	Two.	(1) Apple. (2) Cherry.
25	1893	Ahrens.	Inaug. Diss., Greifswald, 1893.	32	F.	One.	Hen's egg.
26	1894	Schmidt.	Deutsch. Archiv. f. Klin. Med., 1894, Bd. lli, p. 536.	40	F.	One.	?
27	1894	Niewerth.	Inaug. Diss., Kiel, 1894.	19	M.	Two.	(1) 1½ x 3 cm (2) Cherry.
28	1896	Mester.	Zeitschr. f. Klin. Med., 1895, Bd. xxviii, p. 93.	42	M.	One.	5 x 3.5 cm.
29	1896	Sainton (Bernard's Thesis, 1897).	Société Anatomique, Paris, May, 1896.	46	M.	One.	Large orange.
30	1897	Hanason.	Centralb. f. die Grenzgebiete der Med. u. Chir., i, p. 290.	14	M.	One.	Hen's egg
31	1900	Sacquepée.	Zentralb. f. Path. Anat., 1900, Bd. xi, S. 748.	44	M.	One.	Orange.
32	1901	Brion (quoted by Grünert).	Deutsch. Aerzte Zeitung, No. 18.	..	..	..	..
33	1902	Sommer.	Prag. med. Wochen., Bd. xxvii, H. 38, S. 469.	28	M.	One.	?
34	1902	Sommer.	Prag. med. Wochen., Bd. xxvii, H. 38, S. 469.	65	F.	One.	?
35	1903	Kehr.	Münch. med. Wochen., 1903, p. 1861.	29	M.	One.	Hen's egg
36	1904	Grünert.	Deutsch. Zeitschr., f. Chir., Bd. lxxi, S. 158.	21	M.	One.	Apple.
37	1905	De Vecchi.	Bull. della Scienze med. di Bologna, 1905.	83	M.	One.	Cherry.
38	1906	Alessandri.	Bull. d. v. Accad. med. di Roma, Bd. xxxii, p. 63.	22	M.	One.	Hen's egg
39	1906	Livierato.	Gazz. d. Osp. Milano, 1906, Bd. xxvii, p. 593.	28	M.	One.	
40	1906	Wätzold.	Münch. med. Wochen., liii, p. 2107.	44	M.	Several.	Largest, cherry; others smaller.

Position.	Immediate Cause of Death.	Etiology.	Symptoms.	Post-mortem Appearances.
Main trunk ; extrahepatic.	Rupture into common duct.	?	Intense pain ; jaundice ; hæmatemesis ; melæna ; fever.	Other organs healthy.
(1) Right branch extrahepatic. (2) Left branch ; intrahepatic.	Rupture of (1) into peritoneal cavity.	Infective ?	Pain ; jaundice ; hectic temperature.	Pneumonia ; empyema.
?	Rupture into portal vein. Aneurysmal varix.	?	?	Numerous gastric ulcers ; portal thrombosis.
(1) Right branch extrahepatic. (2) Left branch ; intrahepatic.	Rupture of (1) into cystic duct.	?	Severe pain ; jaundice ; fever ; hæmatemesis ; melæna.	Operated on for cholelithiasis.
Main trunk.	Rupture into peritoneal cavity.	Infective.	Collapse.	Phlegmonous inflammation of leg ; hæmatoma of hepato-duodenal ligament.
Right branch ; extrahepatic.	Rupture into hepatic duct.	Cholelithiasis.	Pain ; hæmatemesis ; melæna ; jaundice.	Perforations between gall-bladder and duodenum.
(1) At the point of division. (2) Main trunk.	Rupture of (1) into gall-bladder and peritoneal cavity.	Atheroma of hepatic artery.	?	Cirrhosis of kidney ; atheroma of aorta, etc.
Right branch ; intrahepatic.	Rupture into hepatic duct.	Trauma.	Pain ; fever ; hæmatemesis ; melæna ; jaundice.	Fatty degeneration of heart ; broncho-pneumonia ; anæmia.
Main trunk.	Rupture into peritoneal cavity.	Diffuse Atheroma.	Slight jaundice ; collapse.	Atheroma of aorta, etc.
Right branch ; intrahepatic.	Rupture into hepatic duct.	Infective ? (osteomyelitis).	Hæmatemesis ; melæna.	?
Intrahepatic.	Rupture into peritoneal cavity.	Syphilitic endarteritis.	?	Cirrhosis of liver.
..	..	..	..	..
Main trunk.	Perforation into common duct.	Infective.	Icterus.	Pneumonia ; no atheroma.
Point of origin of gastro-duodenal artery.	Rupture into duodenum and peritoneum.	Trauma.	No icterus.	No atheroma.
Right branch ; extrahepatic.	(Recovery after operation.)	?	Pain ; jaundice ; hæmatemesis.	?
Main trunk.	?	Infective ? Gall-stones ?	Those of gall-stones.	Operation ; gall-bladder full of calculi.
Right branch ; extrahepatic.	Cerebral hæmorrhage.	Gall-stones ?	None caused by aneurysm	Jaundice ; cerebral hæmorrhage ; granular kidney ; gall-stone.
Right branch ; extrahepatic.	Rupture into bile ducts.	Infective ? (pneumonia).	No pain ; no fever ; jaundice ; melæna ; liver enlarged ; gall-bladder palpable.	?
Main trunk.	Rupture into peritoneal cavity.	Infective ? (pneumonia).	Severe pain ; vomiting ; collapse.	Double pneumonia ; thrombosis of hepatic artery ; liver healthy.
Right branch ; intrahepatic.	Rupture into peritoneal cavity.	Syphilitic endarteritis and periarteritis.	Pain in liver region ; those of cirrhosis of liver.	Cirrhosis of liver ; parenchymatous nephritis ; endocarditis of aortic valve.

seat of a suppurative softening; in this part pneumococci can be seen in the sections stained by Gram's method.

*Liver.*—Throughout the organ a subacute interstitial hepatitis is present; the interlobular tissue varies greatly in cellularity, some parts consisting almost entirely of an infiltration of lymphocytes and epithelioid-like cells, while others are much more fibrous (Fig. 2). The little elevated points on Glisson's capsule, noted at the autopsy, are seen to be tags of dense fibrous tissue; their significance is not quite apparent. The branches of the hepatic artery, and especially the smaller branches, show very definite changes (Figs. 3, 4, 5, and 6). In those which are typically affected, the wall presents a hyaline, homogeneous appearance, the differentiation into coats being more or less lost. It was proved by the staining reaction that this was not due to amyloid degeneration. The intima shows varying degrees of endarteritis obliterans, there being great cellular proliferation without any degeneration; this in some vessels is so extreme as to cause almost complete obliteration of the lumen. In all the affected vessels a well-marked periarteritis is present. This is shown by a zone of tissue, resembling granulation tissue, completely surrounding the vessel wall; the cellular elements present are chiefly large epithelioid cells and polymorphonuclear leucocytes, with a few mononuclear leucocytes. This periarterial infiltration in some cases fades gradually into the surrounding liver tissue, while in others there is a zone of young fibrous tissue around it. In many vessels this granulation tissue appears to be invading the degenerating vessel wall. There are thrombi in some of the affected vessels. The larger vessels do not show these changes, but most of them present an irregular thickening of the intima. Numerous pieces of liver tissue were treated by the silver impregnation method, and examined for *spirochæta pallida*, but in none of them was a positive result obtained. Sections of the medium-sized aneurysm showed in its wall portions of the original vessel wall more or less necrosed, and having a layer of granulation tissue outside (Fig. 7). Serial sections of the smallest aneurysm showed it to be a fusiform aneurysm, and, at the same time, the vessel on which it was situated was seen to present changes similar to those just described (Fig. 4). In drawing up the preceding list of cases, the tabular method employed by De Vecchi has been adopted, as it shows at a glance what are the outstanding features of each case.

*Pathological anatomy.*—The most generally accepted and most natural subdivision of the cases is into extrahepatic and intrahepatic; the majority of the cases belong to the former division. Of the 40 cases which have been collected, 24 were extrahepatic and 8 were intrahepatic, while in 2 cases, in each of which 2 aneurysms existed, one of the aneurysms was extrahepatic while the other was intrahepatic. In 6 of the cases, the relation of the aneurysm to the hepatic parenchymia is not stated. In the present case there were three aneurysms, all of which were intrahepatic. The main trunk of the artery has been affected more often than either of its branches; in 16 of the cases the main vessel was involved; in 12 the aneurysm was on the right branch, and in 3 on the left; in 3 cases there was an aneurysm on each of the branches. In 1 case the aneurysm was on the cystic artery. In the author's case, the main aneurysm was on the left branch. Schmidt and Mester both mention that in their cases the aneurysm was of the false variety, but the other authors do not state to which class the aneurysm belonged. In the present instance all the three aneurysms were of the "true" variety. Of the 40 cases, 32 resulted in rupture of the sac, 6 were found unruptured, while in 2 of the cases the condition of the aneurysm is not stated. The rupture occurs in the great majority of cases into either the peritoneal cavity or the bile passages. In 16 cases rupture took place into the peritoneal cavity, in 13 into the bile passages, and in 3 into other organs, viz., the stomach, duodenum, and portal vein. In the author's case the main aneurysm ruptured into the peritoneal cavity. That the aneurysm may undergo spontaneous healing is shown by Ledieu's case, in which an aneurysm occluded by thrombus was found on the hepatic artery of a patient, who died of renal disease without any symptoms referable to the liver. In the case reported by Ross and Osler, the patient died with symptoms of pyæmia, and the liver was found on section to contain multiple abscesses. The aneurysms rarely attain a large size. Those which are extrahepatic are generally larger than the intrahepatic. The largest one hitherto recorded is that of Wallmann, which was of the size of a child's head, while the smallest of the three in the present case—viz., that which was the size of a barleycorn—is probably the smallest which has been put on record. The average size appears to be about equal to that of a hen's egg. In 32 of the 40 cases only one aneurysm was present; in one case the number could not be determined; in five cases (those of Standhartner, Borchers,



Hale White, Sauerteig, and Niewerth) two aneurysms were found; in the case of Chiari there were three aneurysms present; in the author's case there were also three, while in Wätzold's there were several aneurysms. It is of interest to note that in all cases of intrahepatic aneurysm rupturing into the peritoneal cavity, there is of necessity a rupture of the liver produced. In a cursory examination this appears like an ordinary traumatic rupture, except that Glisson's capsule is apt to be stripped from the liver, and careful dissection is required to determine the true cause of the lesion. One can imagine what far reaching effects a case of this kind might have, if occurring in asylum practice, where there was any question of violence having been used in restraining the patient. Sacquépée was the first to point out the importance of aneurysm of the hepatic artery as a cause of rupture of the liver, and Wätzold has subsequently published a similar case. The only other case of this kind in the literature is the first case of aneurysm of the hepatic artery ever published—viz., that of Wilson—in which the rupture was on the surface of the left lobe. The present publication brings the number of cases of rupture of the liver caused by aneurysm up to four.

*Symptoms.*—The three symptoms which are most constant in their occurrence are pain, icterus, and hæmorrhage; the hæmorrhage occurs either from the stomach or the intestine.

Pain is the symptom which is more frequently present than any other. Some writers go so far as to say that it is never absent, but it is certain that in some cases only slight pain is present (Stokes, Irvine), while others may reach a fatal termination without this or any other symptom having asserted itself. In the case now recorded, no symptoms of the condition were present until a few minutes before death, when severe pain was felt in the right hypochondrium; this, however, was probably due to the escape of blood into the substance of the liver, and the stripping of the capsule of Glisson, rather than to the mere presence of the aneurysm. In typical cases the pain comes on in paroxysms, and is of great severity, resembling that of biliary colic; Wallman's patient was rendered almost maniacal by it. It is referred to the right hypochondriac and epigastric regions. In the intervals between the paroxysms, pain is usually absent. Many of these paroxysms may occur during the course of the disease. In none of the cases is the incidence of jaundice stated to have had any relation to the attacks of pain. The pain is said to be due to the pressure of the sac on the

branches of the hepatic plexus of nerves. Mester suggests that it is due in intrahepatic cases to pressure on the liver substance or to stretching of Glisson's capsule; the present case appears to support the latter observation. The pain is usually accompanied by tenderness on pressure in the same region as that in which the pain is complained of.

Jaundice occurs in a large proportion of the cases. Of the 40 cases collected, it is definitely stated to have been present in 16, but in most of the others no definite statement is made regarding it. It is significant that it was noted in most of the cases which have been fully reported. In the cases of Quincke, Lebert (1), and Mester, the jaundice was temporary, but in the others more or less permanent. It is in all cases a hepatogenous jaundice, and arises from direct pressure on the hepatic ducts or on the common bile-duct.

Hæmorrhage into the alimentary tract occurs frequently, and gives rise to hæmatemesis or to melæna, or more commonly to both combined. The blood reaches the intestine in a great majority of the cases by way of the bile-duct, and is a direct sequel to a rupture of the aneurysmal sac into the biliary passages. In Irvine's case, however, the rupture occurred into the stomach, and in Sommer's (2) into the duodenum. In rare cases the hæmorrhage may be due to pressure on the portal vein and consequent passive congestion. In 17 of the cases collected, hæmorrhage is noted as one of the symptoms. A striking feature about these hæmorrhages is that they recur frequently with varying intervals between them; death never occurs from a single large hæmorrhage into the bile passages. Mester suggests in explanation of this, that by the rapid filling of the bile passages by blood, the bleeding is itself checked. When repeated hæmorrhages occur a high degree of anæmia is the result.

Fever has been noted in a few cases, and it may be accompanied by rigors. It usually occurs when the paroxysm of pain is at its height. The temperature may be as high as 104° F. This symptom was first noted by Quincke, and, besides being present in his case, it has occurred in those of Standhartner, Borchers, Caton, Sauerteig, and Mester; but in some of these it could be explained by other causes than the aneurysm. Quincke compares these febrile attacks to those which sometimes accompany biliary colic.

The liver may be greatly enlarged in cases where the aneurysm attains a considerable size; this enlargement was present, and was detected during life in the cases of Sauerteig and Wallmann, but it is quite exceptional. Distension of the

gall-bladder has also been noted in one or two cases; in the cases of Stokes and Alessandri, it was due to pressure of the aneurysm on the bile-ducts and retention of bile in the gall-bladder; in Niewerth's case it resulted from hæmorrhage into the gall-bladder. In no case has a pulsating tumour been detected during life, as can easily be understood when one bears in mind the deep position of the extrahepatic aneurysms and the presence of the hepatic parenchyma round the small intrahepatic ones. Rovighi (*Riv. clin. di Bolonga*, 1886, No. 52) diagnosed aneurysm of the hepatic artery in a case in which a systolic murmur was heard over the liver, but the result of the autopsy did not confirm the diagnosis. This symptom has not been observed in any case in which an aneurysm existed. Digestive disturbance is usually present in greater or less degree, and can be explained by the local mechanical effects of the aneurysm, *e.g.*, pressure on the stomach, pressure on the portal vein causing passive congestion, or pressure on the bile-duct causing diminution of the amount of bile entering the intestine. When the aneurysm ruptures into the peritoneal cavity, there are the usual symptoms of internal hæmorrhage with rapidly fatal termination.

*Diagnosis.*—No case has yet been recognised during life except by means of an exploratory incision. Kehr was the first to diagnose the condition by this means. The two conditions for which it is most likely to be mistaken are cholelithiasis and duodenal ulcer. In cholelithiasis hæmorrhages undoubtedly do occur, though they are relatively much less frequent than in aneurysm. Mester points out that in aneurysm hæmorrhage is often the first symptom observed, whereas in gall-stones it is always a late symptom, and is usually due to fistula formation. The presence of one of the commoner etiological factors of aneurysm would strengthen the diagnosis. One must remember that gall-stones and aneurysm of the hepatic artery frequently exist together, as in the cases of Chiari, Schmidt, Grunert, and De Vecchi. From duodenal ulcer the diagnosis appears to be equally difficult. This is especially so, as duodenal ulcer may cause icterus, either because it happens to be situated on the bile papilla or because of a concurrent catarrh of the common duct. In many cases, therefore, the picture of a duodenal ulcer is reproduced almost perfectly, and the diagnosis would only be possible by exploratory incision.

*Etiology.*—The condition has occurred in females in only one-fourth of the cases; thus, out of 39 cases in which the

sex was recorded, 30 were in men and only 9 in women. The age of the patients ranged from 14 years (Hansson) to 83 years (De Vecchi). The average age of 36 cases was 37 years. The average age of 8 female cases was 45 years, while the average age of 28 male cases was 35 years. The occupation of the patients is not stated in many of the cases, but those in which it is mentioned suffice to show that the condition is met with under widely different circumstances as regards environment; thus one patient was a gentleman of means, another a clergyman, and another a doctor, while among others we find such occupations as seaman, waiter, pedlar, coachman, tapster, and soldier. Fifteen cases have been published in Germany, 7 in Great Britain and Ireland, 7 in Austria, 6 in France, 3 in Italy, and 1 each in Canada and the United States. Trauma was considered the direct cause of the aneurysm in Mester's case, the patient having been kicked on the abdomen by a horse; the fact that the aneurysm was of the false variety seems to support this view of the etiology. In the case of Borchers also there was a history of injury. The traumatic force may, however, act from the interior of the body, and this is the case in cholelithiasis. In four of the recorded cases gall-stones were present, and in at least two of these (Schmidt and Chiari) their causal relationship seems to have been established. Rolleston (*Diseases of Liver*, p. 44) points out that the proportion of women affected is much higher than is the case in aneurysm of other arteries, and he suggests that, considering the greater frequency of cholelithiasis in females than in males, many of these cases may have depended on gall-stones. It will be seen from my figures that the average age of the males affected (35) corresponds to the decennial period during which aneurysms are most frequently found (30 to 40 years); the average age of the females affected is, however, 10 years greater (45), and since the great majority of the cases of gall-stones occur after the fortieth year, this would appear to lend further support to the view that cholelithiasis may have a direct causal relationship to the condition. The production of an aneurysm under these circumstances is explained by the direct injury of the arterial wall by the gall-stone. This would tend to the formation of a false rather than of a true aneurysm, and it is interesting to note that in Schmidt's case the aneurysm was of the false variety. Another form of injury to the vessel wall from without is illustrated by the case of Irvine, in which an aneurysm formed in the wall of an abscess cavity, after the manner in which aneurysms are formed in phthisical

cavities in the lungs. Embolism, and especially infective embolism, would appear to be a probable cause in many cases. In at least two cases a possible source of simple embolism was found in a valvular endocarditis, while the number of cases preceded by suppurative conditions is very striking. Thus no fewer than four cases were preceded by osteomyelitis, three by pneumonia, one by suppurative mediastinitis, one by pleurisy, one by empyema, and one by phlegmonous inflammation of the leg. It has not yet, however, been proved in any case that the aneurysm was due to metastasis of infective material. Atheromatous changes in the aorta and the larger vessels have been present in a considerable number of the cases examined. Niewerth and Chiari mention that atheroma was present in the hepatic artery itself. These arterial changes are looked upon by most of the authors as of considerable importance; but, as De Vecchi observes, they are never present in the hepatic artery alone, but affect equally most of the other vessels, so that some local condition must be present to determine the production of the aneurysm in the liver. This local condition he believes to be cholelithiasis. Syphilis has been mentioned from time to time as a causal factor, but the publication of Sacquépée's case, and more recently of Wätzold's, has demonstrated clearly how syphilitic infection produces aneurysmal dilatation of the hepatic artery. Unfortunately, I have not had access to the former's original article, but, according to Wätzold, the condition in the arteries was described as a severe endarteritis, which was due to a pre-existing syphilis. In Wätzold's own case the arterial changes are thus described:—"The arteries show a definite thickening of the intima and adventitia; the latter consists mostly of a broad circle of very cellular connective tissue. . . . Almost all the vessels show a considerable thickening of the intima, which in many cases has resulted almost or quite in obliteration." In this case also the changes were almost certainly due to syphilis. In the author's case the alterations in the arteries were practically identical with those described by Wätzold, while there was in addition the hyaline degeneration of the vessel walls. Here, too, the patient was undoubtedly the subject of tertiary syphilis, the patch of ulceration on the left leg being typical of that condition. Between these three cases, all of which occurred in syphilitic subjects, there are other points of resemblance; they were all about the same age; in all, the aneurysm was intrahepatic, and caused rupture of the liver by bursting into the peritoneal cavity; in Wätzold's case, and

in mine, the aneurysms were multiple; in each case there was an early cirrhosis of the liver, due probably to the direct action of the syphilitic virus. These three cases seem to prove conclusively that the branches of the hepatic artery may be the seat of a definite pan-arteritis, and that this is undoubtedly one of the causes of aneurysm of the hepatic artery.

While it can hardly be stated unequivocally that the disease in this case is of syphilitic origin, there can be no doubt that the aneurysmal dilatations are due to visible damage of the arterial wall in association with marked lesions in the surrounding connective tissue. The serial sections of the smallest aneurysm form the most convincing proof of this; the wall of the vessel entering it is completely necrosed, and surrounded by a broad zone of granulation tissue. While the actual necrosis must of itself greatly weaken the resistance of the vessel wall to the blood pressure, this is still further diminished by the invasion of the wall by the surrounding granulation tissue (Fig. 4). The cause of the aneurysm is thus a local condition affecting the branches of the hepatic artery in the liver substance. No similar changes were found in the vessels of any of the other organs examined. De Vecchi states that the production of hepatic aneurysm will always be determined by a local condition, and that usually this condition is cholelithiasis. Here we have a local condition of quite a different nature. It is to be noted that we have not simply a disease of the branches of the hepatic artery, but also a condition which might be called a subacute interstitial hepatitis. The lesions might be explained on the supposition that some virus (syphilitic?) was spreading in the connective tissue, and that this acted on the artery walls from the outside.

*Treatment.*—Medical treatment is obviously futile, except as a purely palliative means. If the condition is diagnosed during life an operation should be undertaken, with the view of ligaturing the hepatic artery, or one of its main branches, as this appears to be the only procedure which offers the patient any chance of recovery. The case of Ledieu proves that, when the hepatic artery is gradually occluded, a sufficient anastomotic circulation may be developed to supply the liver with arterial blood. Experiments on animals performed by Cohnheim and Litten further proved that the liver in dogs may survive after ligature of the hepatic artery. The artery was first ligatured in man by Kehr, and the result has established the operation as a justifiable surgical procedure in

these cases. Previous to Kehr's case, three others had been submitted to operation (Sauerteig, Niewerth, Mester), but in none of these was the artery ligatured, nor in any case did the patient recover. Thus Kehr's case, besides being the first in which the hepatic artery was ligatured, was the first which was correctly diagnosed during life, and the first in which the patient recovered. Since then other two cases have received operative treatment, viz., those of Grunert and Alessandri; the former case was diagnosed as cholelithiasis, and the latter as biliary obstruction, probably due to tumour of the head of the pancreas. Unfortunately, in neither of these cases was the fatal issue avoided.

I have to acknowledge the kindness of the late Sir Thomas McCall Anderson, by whose permission the clinical notes are published, and of Professor Muir and Dr. Teacher for their valuable suggestions and advice

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## Obituary.

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ROBERT COWAN LEES, M.B.GLASG., J.P., F.F.P.S.G.

AFTER a brief illness, Dr. Cowan Lees died on the 3rd of last month. His death, which resulted from acute pneumonia, came as a surprise to his professional brethren, as he was known to have been at work less than a week before he became ill. He graduated in 1879, and soon built up a large practice; but, although a busy man, he believed in making time for outdoor exercise. He was a keen and enthusiastic golfer, and engaged in the game regularly for many years. He was a Medical Officer in the 1st Lanarkshire Rifle Volunteers, in which he held the rank of Surgeon-Major. A Conservative in politics, he was chairman of the College Division Conservative Association. In this office he succeeded the late Sir Thomas McCall Anderson, and it is somewhat striking that he should have died so shortly after his predecessor. He is survived by his widow.

## CURRENT TOPICS.

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ROYAL INFIRMARY APPOINTMENTS.—Hugh Galt, M.B., C.M., D.P.H., B.Sc., to be Pathologist, in room of Professor Charles Workman, resigned; James Adam, M.A., M.D., to be Dispensary Surgeon for Diseases of the Ear, in room of Dr. Kerr Love, who is now confining himself to his duties as Visiting Aural Surgeon; A. G. Banks, M.D., D.P.H., to be Extra Dispensary Gynæcologist; John Donald, M.D., D.P.H., to be Anæsthetist.

THE GLASGOW ROYAL INFIRMARY CLUB.—The first annual dinner of the club was held in the banquet hall of the Grosvenor Restaurant on Friday, 27th March. Dr. John Aikman (Guernsey) was in the chair, and the croupiers were Dr. A. Maitland Ramsay and Dr. Eric J. Dyke.

The great majority of the members of the Club are past resident assistants, but past and present members of the medical and surgical staff and superintendents are also eligible for membership. The annual dinner will in future be held on the second Friday in March. The present Committee consists of the Chairman (Dr. John Aikman), Drs. W. K. Hunter, John Patrick, Shaw, and Harrington, and the two Joint Secretaries and Treasurers, Drs. Jas. Scott and Robert Ramsey, with two members chosen by the present resident assistants, Drs. Dyke and M'Kellar. The life subscription is 10s. 6d.

The Chairman (Dr. Aikman) was a resident assistant as far back as the year 1868, and he has always taken a great interest in the Infirmary. The annual dinner was formerly known as the dinner of the "Past and Present Residents of the Glasgow Royal Infirmary," and Dr. Aikman has each year shown his interest in the reunion by sending beautiful flowers to decorate the tables. This year he came 500 miles, at a very busy time, in order to act as Chairman.

The Committee are preparing for publication a list of all past residents from the opening of the Infirmary in 1795. The list is particularly interesting, as showing the tremendous development of the work since that time. In 1796 there was only one physician's clerk. In 1798 a surgeon's clerk was also



appointed, but, as that work did not seem sufficient, he also acted as apothecary, and in some years as chaplain. In 1834 fever hospital clerks were appointed. There are now fifteen resident assistants. The present difficulty is to obtain addresses for the names on the roll, and it is hoped that all past residents who have not received notice of the dinner will communicate with the Secretary, Dr. Scott, 103 Hyndland Road, and give what information they can concerning the men of their time.

The toast of "The Glasgow Royal Infirmary" was proposed by Dr. W. R. Sewell, and replied to by Dr. W. G. Dun. The Chairman proposed the toast of "The Residents." Dr. J. R. Currie replied for the past, and Dr. E. J. Dyke for the present, residents. The toast of "The Chairman" was proposed by Dr. Gavin P. Tennent. The reply and "Auld Lang Syne" brought to a close a most successful reunion.

**HONOUR TO DR. THOMAS REID.**—His Majesty the King of Italy has conferred upon Dr. Thomas Reid the honour of the Order Commendatore of the Crown of Italy. The distinction was, we are informed, suggested by the University of Turin, in recognition of Dr. Reid's distinguished merit in regard to his contributions to ophthalmology, both at home and in the clinique of ophthalmology of Turin.

**BELLEFIELD SANATORIUM APPOINTMENT.**—The Council of the Glasgow and District Branch of the National Association for the Prevention of Consumption have appointed Mr. Beaumont Percival, M.A., M.B.Camb., M.R.C.P.Lond., M.R.C.S.Eng., to be Resident Medical Officer, in room of Dr. Downes, who has been appointed Medical Superintendent of Benenden Sanatorium, Kent.

**APRIL EXAMINATIONS FOR THE DIPLOMA IN PUBLIC HEALTH OF CAMBRIDGE UNIVERSITY.**—One candidate entered from Glasgow University for Part I, and passed, viz., J. Glaister, M.B., Ch.B., Glasgow. Four candidates entered for the same part from St. Mungo's College, and two passed, viz., T. Strain, M.B., Ch.B., Wishaw; D. Stewart, M.B., Ch.B., Cambuslang. For Part II, four candidates entered from St. Mungo's College, and all passed, viz., T. Strain, M.B., Ch.B., Wishaw; J. F. Macdonald, M.B., Ch.B., Stornoway; C. D. Rankin, M.B., Ch.B., Hamilton; W. N. Walker, L.R.C.P.S.Ed., Greenock. Dr. Strain was the

only Glasgow candidate who entered for and passed the entire examination at the one sitting.

**THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.**—In connection with the International Congress on Tuberculosis, to be held in Washington from 21st September to 12th October, 1908, money prizes to the extent of \$7,200, and 79 medals with diplomas, are being offered for competition.

The chief of these is the Hodgkin's Fund Prize of \$1,500, offered by the Smithsonian Institution for the best treatise that may be submitted to the Congress "On the Relation of Atmospheric Air to Tuberculosis." Five prizes of \$1,000 each are also offered. The first of these is for the best evidence of effective work done in the prevention or relief of tuberculosis by any voluntary association since 1905. The others are for the best exhibits of the following:—(1) An existing sanatorium for the treatment of curable cases among the working classes; (2) a furnished house for a working-class family designed with a similar object; (3) a dispensary for the treatment of the tuberculous poor; and (4) a hospital for the treatment of advanced pulmonary tuberculosis. Seven prizes of \$100 each are offered for educational leaflets addressed to various sections of the community, comprising in-door and out-door workers, teachers and taught, and mothers and infants. While gold and silver medals are to be awarded to the less successful competitors in each of these groups, others are reserved for competitions of an equally practical nature in the interests of the crusade against tuberculosis.

Further information may be obtained from Dr. John S. Fulton, Secretary-General of the International Congress, Washington.

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1907-1908.

MEETING IX.—7TH FEBRUARY, 1908.

DEMONSTRATION IN THE GLASGOW ROYAL INFIRMARY  
BY MEMBERS OF THE STAFF.

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*The President, DR. WALKER DOWNIE, in the Chair.*

#### THE PRESIDENT'S REMARKS ON THE DEATH OF SIR THOMAS M'CALL ANDERSON.

Before the public business of the evening is entered upon I would like to refer in a word to the death, so sudden and tragic, of one of our oldest members.

Sir Thomas M'Call Anderson joined this Society in 1861, and he was successively a member of the Council, Vice-President, and President, to which latter office he was elected in 1887. Throughout his long professional life he took an active interest in the work of this and other kindred societies in Glasgow.

For twenty-six years he was Professor of Clinical Medicine in the University, and eight years ago he was appointed to the Chair of Practice of Medicine on the retiral of Sir William T. Gairdner, and but a few months ago, he was appointed, on the death of Sir William, a Physician in Ordinary to the King in Scotland.

This day week he performed his accustomed duties both in the Western Infirmary and at the University, and until the very end he retained his mental and physical activity.

To the majority of us he was known as a teacher, and to many of us as a colleague, and to-night we would extend our sympathies as members of this Society to those who mourn his sudden death.

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I.—DR. MIDDLETON showed a case of spleno-medullary leukæmia.

II.—DR. T. K. MONRO showed—(a) A case of beri-beri associated with a rash; (b) a case of syphilitic nervous disease.

III.—CASE OF SPLENO-MEDULLARY LEUKÆMIA TREATED  
BY X-RAYS.

BY DR. W. K. HUNTER.

The patient is a man, aged 28 years, a joiner by occupation, and he has been under my observation for the past four months.

The symptoms of his illness seem to date from the summer of 1906, when he first complained of general weakness and of some slight swelling of his feet and ankles. At this time he was in South Africa, where he had been working for the past five and a half years. In the month of September (1906) he went to Durban for a change of air, and the doctor there, whom he consulted, told him that his spleen was enlarged. The patient, himself, however, did not think there was much the matter till about the end of October, when a troublesome diarrhoea set in and lasted for a fortnight, leaving him very feeble. He lost about 10 lb. in weight at this time.

In December he went into hospital in Johannesburg, and was treated with x-rays. The rays were applied over the splenic area every second day for a month, and the patient was told that in that time his white corpuscles had lessened from "120,000 to 80,000." The skin of the abdomen, however, was badly burned as a result of this treatment, so that the x-rays could no longer be applied. It took over four months for the burn to heal, and there is still a scar, which can be seen to the left of the umbilicus, as large as the palm of the hand.

There is little of importance in regard to previous illnesses. As a child he suffered from indigestion, but for several years past his stomach has given him no trouble. In 1903 he had enteric fever; from this he made a good recovery. His father, mother, two sisters, and one brother are alive and well. A brother died of consumption.

When admitted to the Royal Infirmary early in October he was seen to be a fairly well-nourished man, though somewhat anæmic. The abdomen was slightly distended, and the spleen could be felt greatly enlarged, extending 3 inches below and an inch to the right of the umbilicus. The liver was not

made out to be enlarged. The cardiac area was slightly increased both to the left and right, but no murmur was heard. There was some dulness over the lower half of the right lower lobe, and some scanty small moist râles were to be heard, but the breath sound was still vesicular and not much changed in intensity. No tubercle bacilli were ever found in the spit. There were no enlarged lymphatic glands to be made out. The blood count was as follows:—Red corpuscles, 2,650,000 per c.mm.; white corpuscles, 250,400 per c.mm.; hæmoglobin, 60 per cent. Of the white cells 25 per cent were polymorphonuclears, 59 per cent marrow cells, 6 per cent mast cells, 7 per cent eosinophiles, and 3 per cent non-granular marrow cells. There was a proportion of nucleated red corpuscles of 4 to 100 white cells.

X-ray treatment was commenced on 17th October, and for the first ten days was applied chiefly to the knees and ankles, and less often over the splenic area. Subsequently the splenic area was treated every third day, the rays on the two intervening days being still applied to the ends of the long bones. As a result of this treatment the spleen steadily lessened in size, till by 21st December its anterior edge was 1 inch to the left of the middle line and its lower margin at the level of the umbilicus. The blood likewise improved, the red cells being now 3,400,000, and the whites 54,000 per c.mm. The proportion of the various whites was as follows:—Polynuclears, 38·5 per cent; marrow cells, 55·5 per cent; mast cells, 4 per cent; eosinophiles, 1 per cent; primitive marrow cells, 1 per cent.

During October, November, and December the patient enjoyed fairly good health. As a rule, the temperature was normal, but occasionally it would be unsteady and rise to 100° or 101°; and this might be so for ten days at a time, during which period the patient would feel out of sorts, and be off his food. There was usually some œdema of the feet when he had been up for any length of time, but only occasionally was there albumen in the urine. There was only very slight increase in the excretion of urea as a result of the x-ray treatment.

On 21st December this treatment was stopped for nearly three weeks, with the result that the white corpuscles increased considerably in number, being, on 8th January, 90,600, and the red corpuscles, 3,000,000 per c.mm. The treatment was then resumed every day as formerly, with again a diminution in the white cells, the numbers being

62,200 on 26th January and 42,400 on 6th February. On the latter date the differential count was—Polynuclears, 48 per cent; marrow cells, 39 per cent; mast cells, 6 per cent; eosinophiles, 3 per cent; non-granular marrow cells, 1 per cent; small lymphocytes, 3 per cent; 3 per cent nucleated red corpuscles to 100 per cent of whites.

[7th March.—For about a fortnight in the middle of February the patient was not very well. There was some fever, his appetite was poor, and blood appeared in the spit. Retinal hæmorrhage and a double neuro-retinitis were also noted. During the past ten days, however, he has been better again.]

*Remarks.*—The *x*-rays as a treatment for leukæmia have now been in use for nearly five years, and the records of a very considerable number of cases so treated are to be found scattered through medical literature. But on reading these over the conclusion is forced on one that there is no satisfactory proof of this treatment having produced a permanent cure in any single case. In a large proportion of cases there is certainly a symptomatic improvement—that is, the white corpuscles lessen in number, the spleen lessens in size, and the general health of the patient improves. This is all borne out by the case just shown to you. But while the improvement in these cases is most often only temporary, still there seems reason for saying that the life of the patient is prolonged, sometimes for even as much as two years, as a result of this method of treatment. Doubtless in some cases there is no improvement whatever, perhaps because the treatment is started too late, for it has been shown that the earlier in the course of the disease the *x*-ray treatment is begun the better has been the result.

It may be claimed that similar good results have been obtained by the administration of arsenic. Still, the evidence to hand seems to favour the view that *x*-ray treatment is the more certain in its action, that with it the reduction in the size of the spleen is more marked, and that the period of improvement is more prolonged. There seems, however, no reason why the two treatments should not be combined, and arsenic given at the same time as the patient has the *x*-rays. This has been done in the case of our patient, and, we think, with good result.

## IV.—CASE OF BANTI'S DISEASE.

BY DR. W. K. HUNTER.

T. W., æt. 44, a tobacco-worker, was a perfectly healthy man till the month of July, 1904, when, without any apparent cause, he was suddenly seized with severe cramps in the epigastrium. He was doubled up with the pains, which lasted for two or three hours; but when they disappeared he felt quite well again, and was able to take his food with good appetite. He had two similar attacks in the next fortnight, and when the pain went away he again felt quite well. About midnight on 10th August (1904) he woke up from sleep, feeling sick, and he vomited about a pint and a half of blood. He went back to bed again, slept well, took a hearty breakfast, with no subsequent symptoms of indigestion, and started his day's work. He was advised, however, to seek medical advice, and as a result he was admitted to the Royal Infirmary on 11th August, 1904. At this time the spleen was enlarged, extending 2 inches below the left costal margin. There was also some anæmia, the red corpuscles numbering 1,980,000 per c.mm., and the hæmoglobin registering 60 per cent. The patient remained in hospital till 3rd October, and in that time the red corpuscles increased to 3,530,000, and the hæmoglobin to 70 per cent. There was, however, a constant leucopenia, the white cells never numbering more than 2,664, and being as few as 1,776 per c.mm. Towards the end of August he had two attacks of epigastric pain, lasting about an hour on each occasion. Otherwise than this he seemed fairly well.

From this time onwards he enjoyed good health till about the middle of October, 1905, when he again had the epigastric pain, coming on most often after food, and lasting for twenty minutes to two hours at a time. The pain was very severe, but there was no sickness and no vomiting. About the end of October the abdomen began to swell, and there was evidence of some free fluid in the peritoneal cavity. The spleen was still enlarged, being  $3\frac{1}{2}$  inches below the costal margin. The red corpuscles numbered 3,610,000, and the whites 2,200 per c.mm. The hæmoglobin registered 35 per cent. The patient was in hospital at this time for a fortnight, but subsequent to that he was not off work for a single day till readmitted on 1st February (1908).

However, although always able for his work, he was not quite free from symptoms. He was a good deal troubled with

a heavy feeling in the stomach after food, and flatulence. During 1907, too, he vomited considerable quantities of blood on three occasions, viz., 27th February, 23rd August, and 27th December. Swelling of the abdomen appeared about the middle of January (1908), and a few days later the feet and legs became cedematous: this has gradually got worse. There has never been any jaundice.

When readmitted on 1st February he looked pale and anæmic, but he seemed a fairly well-nourished man. The abdomen was distended with a moderate amount of fluid, and there was a good deal of cedema of the feet and legs. There was also evidence of some fluid in the right pleural cavity. The spleen extended 3 inches below the costal margin, but the liver was not palpable. There were no enlarged glands, and there was no albumen in the urine. The stomach did not seem enlarged. The red corpuscles numbered 2,100,000, and the whites 2,000 per c.mm. The hæmoglobin was 35 per cent. Of the white cells 70 per cent were polymorphonuclears and 30 per cent lymphocytes. Films showed considerable variation in the size of the red cells, most being smaller and few larger than normal. No megaloblasts and no definite megalocytes were to be seen, and only very few normoblasts.

*Note.*—Since above was written the cedema has greatly increased, so that during the last ten days of February over 26 pints of fluid were withdrawn from the abdominal cavity at threeappings. The fluid, however, just gathers again, and the patient's breathing becomes much embarrassed. During this same period the white corpuscles were counted on three occasions, and they were always below 3,000 per c.mm.

V.—CASE OF PAROXYSMAL TACHYCARDIA AND ARHYTHMIA,  
WITH UNDULY MOVABLE HEART.

BY DR. W. K. HUNTER.

J. W., aged 43, a hammerman by occupation, was sent into hospital on 3rd August, 1907, as a case of chronic nephritis. He says the kidney trouble dated from the middle of July, when he had a "touch of influenza," and since then his feet had been swollen. However, nine or ten years ago he seems to have had another attack of nephritis, which kept him in bed for three months, and off work for three months longer.



From this illness he must have made a good recovery, for he has worked hard all these years without any special disability.

At present he seems to be suffering from a fairly typical chronic parenchymatous nephritis, as shown by our observations of the urine now extending over six months. He has also a double aortic murmur, but he insists that, other than the tachycardia, he has had no symptoms pointing to cardiac failure. He says he has never had any shortness of breath while at his work, which is very laborious, or on walking fast up a hill.

The tachycardia dates back to seven years ago, when he got a blow with a hammer over the precordium. Ever since then he has been subject to attacks of palpitation, but he cannot say what induces their onset. While under observation in the ward the attacks of tachycardia were seen to come on in a very irregular manner. Sometimes he would waken in the early morning with the palpitation, or else it would come on at almost any hour during the day. Sometimes it would last for fifteen minutes at a time, or, again, it might go on for twelve hours or more. The rate of the pulse at these times would range from 114 to 136, and in the interval between the attacks from 80 to 88. From the middle of September to the end of the first week in October the paroxysms of tachycardia came on about every second day, and from the latter date to the end of November about once in seven to ten days. From the end of November to the end of January he says he has had only one paroxysm.

There has also been a good deal of cardiac arrhythmia noted, particularly during the month of September. This was most often bigeminal in type, but it was sometimes trigeminal, or even with four or five beats together, and then followed by the bigeminal rhythm. At other times the pulse tracing was quite regular. Sometimes the bigeminal pulse would give place to the tachycardia, and we have tracings showing this. The rhythm of the tachycardia pulse was always regular.

The change in the cardiac percussion area as the patient lies on one side or the other is very notable, but it has not been determined that change of posture could produce a paroxysm of tachycardia. As he lies in the dorsal decubitus the apex impulse is in the nipple line, the right border of dullness an inch and a half to the right of the middle line, and the left three-quarters of an inch to the left of the nipple line. When lying on the left side the left border of the dull area moves 2 inches to the left of the nipple line, and the



TO ILLUSTRATE DR. HUNTER'S CASE OF PAROXYSMAL TACHYCARDIA.



FIG. 1.

Polygraph tracing from left radial and right carotid during period of arrhythmia.



FIG. 2.

Tracing from left radial.



FIG. 3.—Tracing from left radial artery.



FIG. 4.—Tracing from right radial during blood transfusion (pale-exposed film).



FIG. 5.—Tracing from left radial after blood transfusion (pale-exposed film).



FIG. 6.—Tracing from left radial after blood transfusion (pale-exposed film).

# TO STRATTON HUNTER'S CASE OF PAROXYSMAL MYOCLONIA



Fig. 1. Tracing of the EEG during the attack.



Fig. 2. Tracing of the EEG during the interictal period.



FIG. 3.—Tracing from left radial showing arrhythmia.



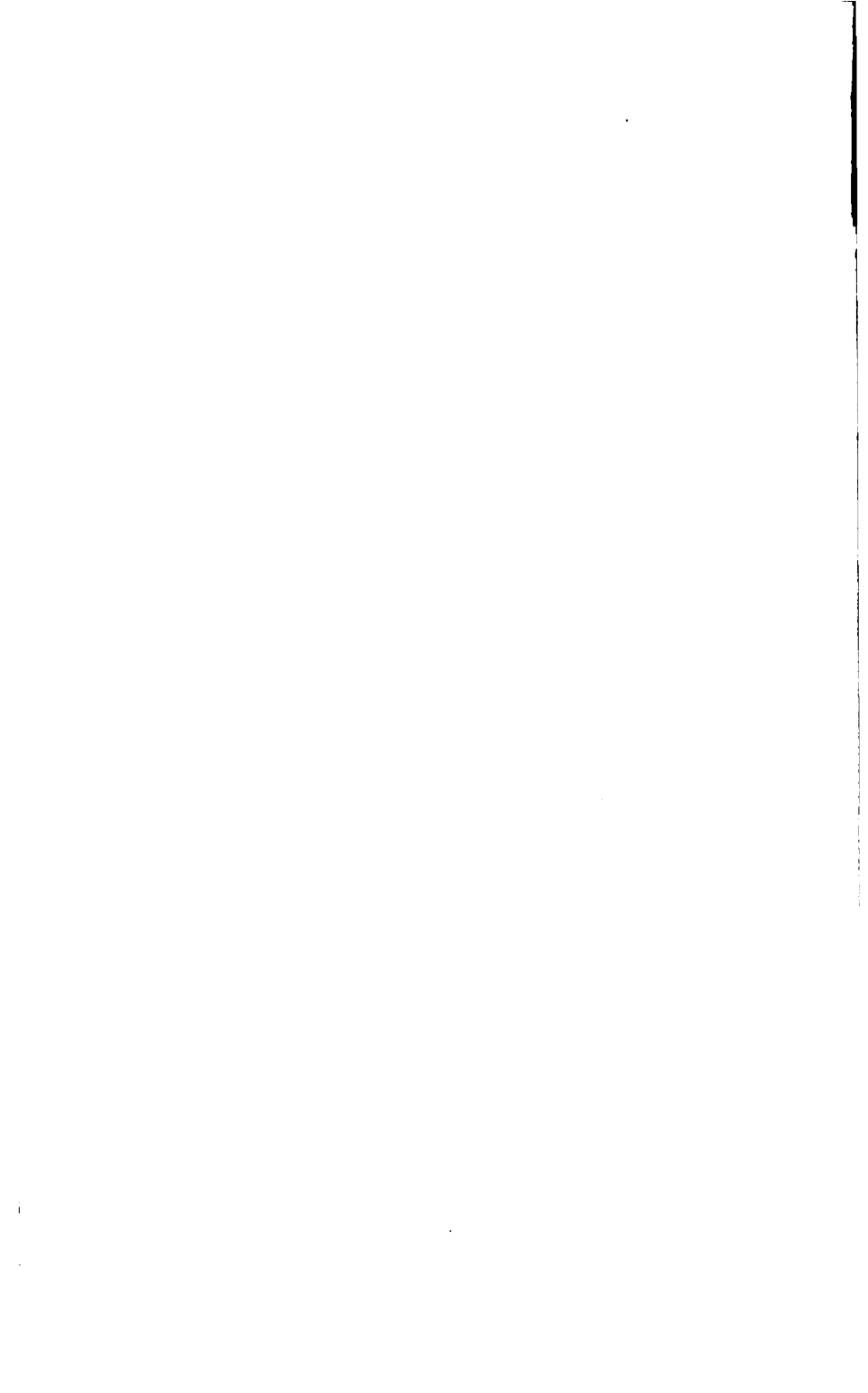
FIG. 4.—Tracing from right radial during attack of tachycardia (pulse-rate, 140).



FIG. 5.—Tracing from right radial taken three minutes after Fig. 4.



FIG. 6.—Tracing from left radial during attack of tachycardia.



right border comes to the left of the middle line. When in the right lateral decubitus the right border lies  $2\frac{1}{2}$  inches to the right of the middle line and the left border half an inch to the inside of the nipple line. The cardiac area has, therefore, not the same transverse measurement in each decubitus, but the movement of the area is apparently about 2 inches with change of position from one lateral posture to the other.

*Remarks.*—The arrhythmia in this case seems to be due to extrasystoles produced by extra abnormal stimuli applied to some part of the heart muscle. What the exact point of origin of the extrasystole is, whether from the venous sinuses, auricles, bundle of His, or ventricles, it is difficult to determine from the tracings before us. Probably it is not from the vena cava, for there is seldom a "compensatory pause" after an extrasystole produced there; but from which of the other three it has not been determined. Clinically, extrasystoles occur most frequently in cases of myocardial disease. But certain toxic substances—such as tea, coffee, tobacco, or uræmic poisoning, or changes in blood pressure—may so increase the irritability of certain parts of the heart as to cause them to respond to stimuli which would not be effective under ordinary circumstances. In this way also may extrasystoles be produced. In the case of our patient, one naturally thinks of uræmia as a possible cause of the arrhythmia. But he has shown no other sign of uræmia, and as the excretion of urea has been almost invariably considerably above rather than below normal, we incline to exclude this as a cause of the cardiac irregularity. It seems more likely that the condition depends on some actual myocardial disease.

As to the tachycardia, it is in dispute whether the more numerous beats in such cases are due to extrasystoles or to an increased number of ordinary contractions, *i.e.*, whether it is due to an increased excitability of the heart alone, or to some inhibition of the ordinary vagus (inhibitory) impulses. The association with the arrhythmia rather suggests a "cardiac" origin for the tachycardia in our case, though, on the other hand, one cannot ignore the arguments in favour of the "nervous" origin in similar cases.

VI.—DR. J. M. COWAN showed a case of syringomyelia, radiograms of some cases of spondylitis and acromegaly, and a large series of blood-pressure charts, &c.



VII.—DR. ARCH. HARRINGTON showed specimens of blood from a case of pernicious anæmia.

VIII.—DR. A. J. BALLANTYNE showed a series of drawings of pathological conditions of the fundus.

IX.—DR. J. B. MACKENZIE ANDERSON showed—

1. A woman, æt. 41, suffering from large thoracic aneurysm of at least five years' duration. The aneurysm had eroded the manubrium sterni, and destroyed the sternoclavicular articulations. There was a history of syphilis and alcoholism.

2. A boy, æt. 9, suffering from anæmia of a high grade, associated with large spleen and liver. The blood picture was that of pernicious anæmia, but the other signs and symptoms suggested a diagnosis of splenic anæmia. During residence in hospital there had been a striking improvement, both in the blood condition and in the patient's general health.

X.—DR. JAMES A. ADAMS showed two patients illustrating the difference between the results of suture by catgut and by wire. Three sutures of No. 2 chromicised catgut were inserted by means of the drill—one mesial and two lateral. The periosteum was sutured separately by a fine catgut suture. The advantages of this method are closer approximation of the fragments and the absence of a wire to be removed. The second was an old case (five months), with wide separation of the fragments, firm adhesions, and contractions of the quadriceps extensor muscle. The amount of tension necessary to the approximation of the fragments required the use of a stronger material than catgut, and wire was used in two sutures—a superficial and a deep one. The results in both cases were excellent. He also showed a man of 65 years, who, after five years of "catheter life," had his prostate removed by the suprapubic method. He made a good recovery. A patient, æt. 22 years, whose left arm and shoulder girdle were removed for sarcoma of the upper end of the humerus, was shown. The patient was dismissed "well" three weeks after the operation. A case of compound dislocation of the elbow, in which the lower end of the humerus had been removed, was exhibited to show the wide range of movement obtained. A case of pyloric obstruction, due to adhesion of pylorus and duodenum to the liver, treated by posterior gastro-jejunostomy, was shown. He was dismissed three weeks after operation, free from gastric symptoms. A patient

in the wards whose uterus had been removed for multiple fibroids was also shown, and the method of operation was described. The stump of the cervix was covered with peritoneum, and no drain was used. Her progress has been uninterruptedly good.

The benzine method of cleansing wounds impregnated with oil, soil, and other kinds of dirt was described. The grosser impurities were first washed off with soap and water, tags of lacerated and ingrained tissue were removed by scissors and knife, the edges were trimmed, and then the wounds were sutured completely without drainage. The cases shown were (a) a man with extensive lacerated wounds of the scalp, due to a fall of coal from the roof in a pit, exposing more than 3 square inches of bone. He was dismissed in twelve days with the wound completely healed. (b) A man whose arm had passed into some machine, with the result that the whole skin of the dorsal aspect of the fore-arm was reflected, exposing the muscles. Primary union was obtained. Some parts of the flap of skin were excoriated, and took longer to heal than the main flap. (c) A boy whose ear was badly torn by being caught in a trace-chain—cleansed and sutured in position—showed a fine line of union. (d) A young woman whose arm was caught by cog-wheels just above the elbow. Part of the external condyle was lost. Result excellent.

XI.—DR. A. N. M'GREGOR showed ten patients who had been under treatment for various forms of internal derangement at the knee-joint. Seven of these were cases in which a semilunar cartilage had been torn or split. In one there had been thickening of the internal semilunar cartilage at its free edge after injury. In another case a loose, partly ossified cartilaginous body was removed eight years after injury to the knee; and another patient had numerous osteophytes in both joints, which were removed by operation. These ten patients were consecutive cases, and all of them made good recoveries, the function of the joint in each being completely restored.

Discussing the causation and treatment of torn semilunar cartilages, Dr. M'Gregor said that in these cases the patients had twisted their knees in various ways, that some of them were uncertain as to the positions of the joints at the time of the accident, and that in three cases there was rupture of the cartilage following upon a sudden extension of the limb after complete flexion. The lacerations were mostly of the free edges of the cartilages, but there were two in which the

split was central. The diagnosis was based on the history of the injury, of swelling and pain in the joint immediately after the accident, and recurrence of the pain and swelling on movement of the joint. The presence of a hydrops, in the absence of palpable lesions of the synovial membrane, locking of the joint at times, but, more importantly, incomplete extension of the knee, with pain on forced extension, were the principal symptoms. In some of these cases there were irregularities and depressions between the bones at the inner side of the knee when the limb was moved. The incision parallel to, and on the inner side of, the patella, curving inwards and backwards over the head of the tibia, was preferred as giving easy access to the joint. The limbs were left free from the tenth to the fourteenth day, and passive movement was then begun.

XII.—MR. J. H. PRINGLE showed—(a) A patient with myositis ossificans; (b) a patient after treatment for oesophageal stricture by retrograde dilatation; and also showed the following as card specimens:—(a) A patient operated on for melanotic sarcoma of the thigh; (b) two patients after treatment for congenital dislocation of the hip-joint; (c) a patient after treatment for empyema; (d) a patient after operation for tuberculous pelvic glands.

XIII.—MR. HENRY RUTHERFURD showed—

1. *Chronic obstruction in the child, tubercular—Two successive operations, the latter being ileo-sigmoidostomy—Result good.*—The patient shown was a girl, aged 9 at the date of the first operation. The symptoms, extending over fourteen months, were abdominal pain, alternating constipation and diarrhoea with distension, splashing sounds, vomiting, with visible peristalsis. These were relieved temporarily by purgatives, their action being attended by pain.

*7th November, 1906.*—Exploration, a stricture found in small intestine formed by a ring of tubercular growth, with cicatricial contraction in the adjoining mesentery, and enlargement of the glands. An anastomosis was made between the portions of bowel immediately above and below the stricture. Relief was immediate, large motions were passed, and the pain and distension disappeared.

Three weeks later some recurrence of symptoms was noted, and for the next two months were only kept in moderation by the regular use of castor oil, 1 drachm daily. By the end of January, 1907, there was noted well-marked emaciation,

occasional œdema of the face, with flushing of the cheeks. Splashing sounds always obtainable.

*30th January, 1907.*—Abdomen reopened through the old scar, distension and hypertrophy of small bowel and caput cæcum found, the ascending colon beset with nodules, and bound down to the posterior abdominal wall.

Lateral anastomosis done between the lesser part of ileum and the rather contracted sigmoid flexure. Relief was again immediate, a bulky motion being passed at night after operation, when temperature rose to 101·8°. A month later it is noted that there has been no more distension or pain, but that those have been replaced by diarrhœa. This was only slightly moderated by dieting and astringents. The child emaciated, and seemed to be dying, was taken home on 17th March, 1907.

*Present condition.*—Has put on flesh, runs about, has no pain. Too full in abdomen, superficial veins dilated. Bowels move two or three times in the day; motions not formed. Weight—December, 1907, 3 st. 11 lb.; March, 1908, 4 st. 1 lb. According to the mother, "eats anything."

2. *Aneurysm of external carotid at seat of ligature preliminary to excision of lower jaw and tonsil—Treated by ligature of common carotid—Successful.*—The patient was a man, aged 48 at the date of his first operation, 1st July, 1907; this consisted in removal of the right half of the tongue and tonsil for epithelioma, access being obtained by splitting the cheek. The submaxillary triangle was also cleared out. The diagnosis was confirmed microscopically by Dr. M. B. Hannay, who found nothing in the glands.

On 23rd August, there being a suspicious appearance in the region of the fauces, a second operation was performed. A triangular flap was turned back from the middle of the lip and chin in front, giving access to the external carotid at the bifurcation, close to which it was tied. The jaw was divided at the socket of the first molar, and the proximal part removed with the underlying cicatricial tissue, part of the base of the tongue, and the soft palate from beyond the uvula. No epitheliomatous growth was found in the parts removed. Patient went to the Home on 20th September.

On 1st November he was found to have an aneurysm at or above the seat of ligature. There was a more or less fusiform or elongated globular swelling, about the size of a filbert, with easily felt distensile pulsation. Its lower limit is opposite the upper border of the thyroid cartilage; its upper

reaches quite to the scar of the second operation, which is puckered and drawn up above the hyoid.

*4th December, 1907.*—To-day the common carotid was tied through an obliquely transverse incision rather above the level of the cricoid. Omohyoid not seen. Internal jugular overlay the carotid very markedly.

No. 1 chromicised gut (van Horne's) was used. It was pulled as tight as a double hitch would let it go. The sternomastoid, which had been slightly notched, came well forward over the vessels; wound closed.

The obliteration of pulsation in the aneurysm was complete, as was also the pulse in the temporal artery.

Patient was dismissed on 30th December. There was no pulsation at the site of the aneurysm, though a slight thickening could be felt. No pulse in temporal at the zygoma.

I had some doubt as to the probable efficacy of proximal ligature in this case, in view of the abundant branching at or immediately above the aneurysm, and had considered the question of dissecting it out. As regards the mode of production of the aneurysm on the external carotid, this is associated in my mind with the fact that the ligatured part lay in what for the first fortnight was practically an open granulating wound, exposed to the discharges from the mouth, which it was impossible to shut off entirely from the wound in the neck.

3. A young man of 20, showing deformities after thorax resection for tubercular empyema seven years ago: (a) lateral curvature; (b) paralysis of abdominal muscles in the area corresponding to the lower intercostal nerves. Patient in good condition otherwise; able to make his living by taking charge of a horse and trap.

4. Two cases of resection of the urethra—one of ten years' standing, in a boy then 10 years of age, for traumatic stricture; and one done recently in a man for impassable stricture in the pendulous portion (microscopic sections of this stricture shown).

5. A man, aged 40, in whom pylorotomy for cancer was done nine months ago. Operation completed by closure of duodenum and stomach and posterior gastro-enterostomy. Patient in excellent condition; back at work as plumber for the last three months.

6. A woman of 40, in whom subacute perforation of the stomach was treated six days later by posterior gastro-enterostomy. There was some free gas in the abdomen, as recognised both before opening and after, but there had been no escape of stomach contents. The anterior surface of the stomach was extensively agglutinated to the under surface of the loin, and this adhesion was not disturbed.

The patient was now in excellent condition (three months after operation).

XIV.—DR. J. KING PATRICK demonstrated two forms of apparatus designed for the purpose of administering known percentages of chloroform vapour during anæsthesia. These were—(1) The regulating inhaler of Mr. Vernon Harcourt, F.R.S.; and (2) that of Mr. Harvey Hilliard, Anæsthetist to the London Hospital.

The central idea of both instruments is the same, viz., to cause the inspired air of the patient to pass over a surface of chloroform contained in a receptacle of known dimensions and at a known temperature, and by an arrangement of valves to cause the expirations to pass directly into the external atmosphere. By means of Mr. Harcourt's apparatus, percentages of chloroform vapour from 0.2 to 2 can be administered by turning a pointer on a graduated arc, and this may be increased to 3 per cent by means of the "increase tube." With Mr. Hilliard's inhaler the maximum strength of vapour is  $4\frac{1}{2}$  per cent, and ether may also be given by means of this instrument.

The Vernon Harcourt inhaler is described fully in the *British Medical Journal*, 18th July, 1903; *British Gynæcological Journal*, May, 1904; and the Harvey Hilliard inhaler in the *Lancet*, 29th July, 1905.

(The report of this Meeting will be continued in our next issue.)

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## GLASGOW SOUTHERN MEDICAL SOCIETY.

AT the meeting of the Southern Medical Society on 30th January, Mr. A. E. Maylard presiding, the subject of discussion was the "Treatment, Prophylaxis, and Prognosis of Syphilis." The subject was introduced by DR. ALEX. MACLENNAN, whose remarks may be summarised thus:—

1. Treatment must be as early as possible. There is only one certain sign of the primary sore before the advent of the secondaries, viz., the presence of the spirochæta pallida. No surgical treatment of the primary sore has any influence on the future course of the disease.

2. The main curative agent is mercury.

3. Mercurialisation is to be periodic, not continuous. The interruptions to the treatment prevent either the tissues or infective organisms acquiring an immunity to the drug.

4. Mercurialisation must be prolonged. One series of doses after another must be administered to rid the victim of the last of the invaders. As the infection is inveterate, the treatment must be "chronic."

*Adjuvant treatment.*—The tissues are suffering from two poisons—one microbic, the other metallic—and, therefore, we must use all other strengthening agencies as allies. Iodide of potassium may be considered an adjuvant, as it supports mercury in its action against the infective organisms, and it has a direct action on the manifestations of the disease.

*The ideal treatment.*—Start with proto-iodide of mercury, 1 to 1½ grain per day. Continue this for six weeks. During the pause, which may last six weeks, administer iodide. Stop all treatment for two weeks, then 30 grains iodide daily for first week, 45 grains for second week, and 60 grains daily for third week. Return to mercurial treatment after a week, and use perchloride, proto-iodide, or inunction, and continue the treatment for other six weeks.

*Newer methods of treatment.*—Atoxyl in the treatment of the disease has declined much in popularity. Hallopeau recommends 75 grains to begin with; two days later, 60 grains; three days later, 50 grains; then in ten days a course of mercury lasting 50 days, and finally iodide.

Pilocarpine has been recommended as an adjuvant to reduce the amount of mercury necessary and lessen the tendency to salivation. Give in pill form  $\frac{1}{16}$  grain daily.

*Serum.*—Dog's serum has been affirmed to be beneficial in tertiary lesions, but its virtue is doubtless due to its nutrient properties.

*Inoculation.*—The workers of the Pasteur Institute have advocated inoculation of an attenuated syphilis, as syphilis in its early period is not a severe disease.

*Syphilisation.*—This older method has been lost sight of, but in view of the opsonic doctrine there may be more in it than has been admitted. Syphilisation consists in the inoculation of patients with virus from their own primary sore till no further reaction follows.

It has been shown that the spirochæta pallida is influenced by the giving of mercury. Experimentally it has been proved that the influence of mercury and atoxyl is much greater at the beginning of the infection than later on. As the spirochætes have a tendency to nocturnal increase, it might be better to give more of the drugs towards evening.

*Prophylaxis.*—Every case of infective syphilis should be notified, and should be interned in a hospital.

Prognosis depends upon a great many factors. The effects of syphilis cannot be prognosticated from the mildness or severity of the primary symptoms. The occupation, social status, and the condition of the patient all have a bearing on the course of the disease. The occurrence of tertiaries will depend altogether on the energy of the treatment, the time it was begun, and the amount of toleration possessed by the victim for mercury. Tertiaries occur among the properly treated in about 3 per cent, while in the untreated and inadequately treated the percentage is 80. Tertiaries may attack any organ in the body, but have a special affinity for the nervous system. Of 4,000 cases collected by Fournier, 2,000 had syphilis of the nervous system. The immunity conferred by one attack of syphilis is not absolute, as I have seen a case where a second chancre has developed.

The contagiousness of syphilis depends primarily on the primary sore, the mucous patches, and the condylomata. So long as these are present the disease is infective. Hutchinson declares that the infection rapidly dies down, and there is no case on record where contagion has taken place after the lapse of five years.

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## REVIEWS.

*The Labyrinth of Animals, including Mammals, Birds, Reptiles, and Amphibians.* By ALBERT A. GRAY, M.D.Glasg., F.R.S.Ed. Vol. II. London: J. & A. Churchill. 1908.

THE labyrinths of such mammals as were not included in the first volume, viz., rodentia, insectivora, cetacea and sirenia, and marsupialia, are here represented. Further, the labyrinths in birds, reptiles, and amphibians are included, finishing the work.

The section on birds is prefaced by "general remarks," in which, after referring to the absence of any complete spiral in the cochlea, Dr. Gray discusses the resemblance of the avian labyrinth to that of reptiles. Similar general remarks preface the section on reptiles and amphibians.

In this volume, as in its predecessor, we have the same careful and detailed description of specimens, and the same avoidance of even an approach to hasty generalisations. The work is original, and the worker refuses to take anything for granted.

We congratulate the author on the production of a monograph of which he may deservedly be proud, and which reflects credit on the school of which he is so prominent a member.

*Studies in Blood-Pressure: Physical and Clinical.* By GEORGE OLIVER, M.D.Lond., F.R.C.P. Second Edition, Enlarged. London: H. K. Lewis. 1908.

THIS edition is larger than its predecessor, owing to the incorporation of additional results of work by the author himself and others. Dr. Oliver refers to certain irregularities which are occasionally shown by the armlet readings, and which he attributes to sclerosis of the arterial wall. This has led him to introduce a supplementary method on a different principle from that of the armlet, and not influenced, it would appear, by irregularities in the vessel-wall. This is to be used in conjunction with the other method. He warns us not

to attach to hæmomanometry a greater importance in clinical work than it really deserves, and he rightly cautions us against allowing our tactile skill in examining the pulse to become impaired by neglect. We congratulate Dr. Oliver on the early call for this new edition, which no earnest student of blood-pressure can afford to overlook.

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*Medical Philosophy.* By W. RUSSELL. London: Henry Kimpton. 1907.

THE writer of this somewhat remarkable book might, considering its nature, more appropriately have chosen for its title "The Stomach and Bowels," rather than that of "Medical Philosophy." What his object could be in compiling such a work we are unable to understand. Indeed, it is at times something of a puzzle to know whether he is really serious, or slyly poking fun at the profession. Whichever view is taken, it is, without doubt, an exhibition of remarkable erudition of a kind which we cannot help feeling is entirely wasted. The greater number of authorities quoted in support of his theories, from Hippocrates to Buchan's *Domestic Medicine*, wrote long before the days of modern medicine, the newer views of which he entirely ignores, or is ignorant of, particularly in relation to many well-established microbic diseases.

The author's idea, insisted on to weariness over 500 pages, is that the source of all disease is caused by morbid humour in the system or in the blood—that this arises from indigestion or constipation, and that its only remedy is purgatives. There is not, indeed, a single disease to which human flesh is heir which cannot be prevented or cured by purgation. So dominated is the mind of the author by his theory that he is compelled to the fantastic conclusion that disease first gained entrance into a world, the health of the animal kingdom in which was perfect, by Eve eating an apple, which must have been injurious or indigestible, his inference, doubtless, being that we might all have yet been living in Paradise had our first mother only been subjected to a judicious course of purgation.

Our mental and moral qualities likewise—individualities of character, matters so subtle and baffling to most human philosophers, are, he guilelessly contends, dependent simply on our physical condition, the state of the stomach and bowels

Whether fate has in store for us the vocation of a poet or a mathematician, the choice hinges on the same doctrine; or if a statesman, and we are to save our country or blunder it into a stupid war, depends on a full or empty bowel. Our crimes, too, and our drunkenness he relegates to the same category, our salvation, of course, lying in purgation.

Sanitation he characterises as a myth, all diseases arising from within and not from without. Only keep the great human sewer—the bowel—flushed well with purgatives, and you may laugh to scorn the conditions of the outside sewers and drains as being perfectly harmless.

We are pleased to admit that he has some sensible remarks on the subject of education, but even here, like the too eager archer, he overshoots the mark.

*A Chronology of Medical History.* By JAMES YOUNG, M.D.  
Bristol: Edward Everard. 1908.

IN this epitome of medical history the individual paragraphs give an account of famous medical teachers, discoverers, schools, &c., while the corresponding dates are arranged in the left-hand margin of each page. The history extends from Sekhet'enanch (B.C. 3500) to the close of the Victorian era (1900), and is followed by an index. It strikes us as a decidedly good piece of work, and we commend it to the notice of all our readers as a convenient, and, at the same time, inexpensive work of reference. But surely Clopton Havers did not live for more than a century and a half, 1550-1702 (page 37)? We rather think the year of his birth, and his place in this history, are antedated.

*The Medical Epitome Series. Pathology:* By JOHN STENHOUSE, M.A., B.Sc., M.B., Toronto; and JOHN FERGUSON, M.A., M.D., Toronto. *Diseases of the Nose and Throat:* By J. BRUCE FERGUSON, M.D., New York. Edited by VICTOR COX PEDERSEN, A.M., M.D., New York. London: Hodder & Stoughton. 1906.

WE have already reviewed the volumes of this epitome series, some seventeen of which had at the time of our review reached us (see the June, 1907, number of this

*Journal*). These are two additional volumes. They are in keeping with the others, both in size and general style. It seems unnecessary to say more than that, granted the advisability of teaching by epitome, these, like the earlier volumes, will find their appropriate place in the library of the present-day student, who, we must suppose, finds much efficacy in the "spoon-feeding" which such books can give.

As suggested in our earlier review, the volumes on special branches of medicine were the most successful of the series. This is borne out by consideration of the two now before us, for while the volume on diseases of the nose and throat is, of itself, and quite apart from the series as a whole, quite a satisfactory presentation of the subject with which it deals, it is impossible to accord similar credit to the other volume. The subject of pathology is so large and varied that the attempt to condense it as done here, into brief epitome, could not be expected to succeed, and has not, in fact, resulted in more than the production of a condensed ready-reckoner kind of guide book, the proper understanding of which, and effective assimilation from which, must necessitate frequent and extensive resort to larger text-books. But perhaps this ought to be reckoned in its favour rather than the reverse.

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*The Medical Annual: A Year Book of Treatment and Practitioner's Index.* Bristol: John Wright & Co. 1907.

THE appearance of this *Annual* is welcomed by a very large circle of the more thoughtful members of the profession, who recognise the revolutionary changes which every year are taking place in the whole science, art, and thought of medicine. As the editor very appropriately remarks: "The present is a period when the practitioner who is not abreast of modern thought will find himself a hopeless straggler in the rear." The truth of such a statement is not likely to be disputed. All the more acceptable, therefore, is a volume such as this, which presents, in useful and interesting form, a series of illuminating articles on many of the more revolutionary changes which have emerged, or undergone further development, in the course of the year. The contributors of these articles are, with few exceptions, of the highest standing, and, in addition to speaking authoritatively on their particular subjects, they have together succeeded in producing a volume which is, almost in every part, eminently readable and interesting.

The illustrations, which are copious and include many beautiful coloured plates and numerous photographs (some of which are stereoscopic), are generally excellent, and greatly enhance the value of the volume. It is safe to say that this, the twenty-fifth issue of the *Annual*, surpasses all its predecessors, high though the standard which these had attained. The editor and publishers must be congratulated on the comprehensive and instructive result of their labours.

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*The Border-Land of Epilepsy: Faints, Vagal Attacks, Vertigo, Migraine, Sleep Symptoms, and Their Treatment.* By Sir WILLIAM R. GOWERS, M.D.Lond., F.R.S. London: J. & A. Churchill. 1907.

CHAPTER I is an interesting and suggestive essay on Faints and Fainting. The author discusses the immediate cause of the loss of consciousness which occurs under different conditions, as in an ordinary fainting fit, in the fatal syncope of aortic regurgitation, in an epileptic attack, and after a sudden blow on the head; and he suggests that the cause may be found in the mobility of the dendrites, which may permit of discontinuity of conduction at the meeting place of the neurons in a conducting path. Attention is called to some very important points of distinction between cardiac syncope and minor epilepsy, and evidence is adduced to show that repeated cardiac syncope may dispose to epilepsy. The chapter closes with some brief but valuable remarks on treatment.

Chapter II treats of Vagal and Vaso-vagal Attacks, or seizures in which the symptoms consist chiefly in disturbances of some of the functions of the vagus nerve. Thus there may be discomfort or pain referred to the stomach, the heart, or the respiratory system. Angina vasomotoria may be included in this group, and possibly also the sense of impending death. Cases are quoted to show that even this group may occasionally claim a certain kinship with epilepsy; and Sir W. Gowers suggests that in some instances the elements of an epileptic seizure may be lengthened or drawn out, and so rendered less intense, though not less distressing. Several pages of this chapter are devoted to the very important question of treatment.

Chapters III and IV deal with the subject of Vertigo. It is pointed out that the features common to epileptic

attacks and aural vertigo include suddenness, brevity, loss of consciousness, and loss of sight. Consideration is given in detail to these phenomena, and also to the sense of impulsion, to encephalic vertigo, to attacks during sleep, and to the association of aural vertigo and epilepsy, as well as to treatment.

Chapter V is devoted to Migraine, and ought to be very carefully studied by all who are interested in neurology. The author states that migraine is represented in young children by "feverish attacks, with headache, which bear an alarming resemblance to meningitis, but pass off in about twenty-four hours, to recur after a few months."

Chapter VI is on the interesting subject of Sleep Symptoms, including such conditions as night-terrors, somnambulism, and narcolepsy, and their treatment.

The volume, as a whole, deals with a fascinating subject, and the author's vast experience, keen intellect, and delightful style both charm the reader and claim the most careful attention.

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*Tumours, Innocent and Malignant: their Clinical Characters and Appropriate Treatment.* By J. BLAND-SUTTON, F.R.C.S. Fourth Edition, with 355 Engravings. London; Cassell & Co., Limited. 1906.

THREE and a half years have intervened between this edition and its predecessor; and the increase in the number of pages and of illustrations shows that the work is by no means a mere reprint of former editions. One apparent change in the matter is due partly to re-arrangement, old paragraphs appearing in new corners. For example, in the section on sarcoma of synovial membrane, we find a specimen figured (p. 73) which appeared in the last edition as an example of enlarged villi (p. 38). Then we have the De Morgan spots mentioned in a chapter on pigmented tumours; in the previous edition they were considered in the chapter on cancer.

There is, however, much new matter. Attention is drawn to Teacher's work on chorion-epithelioma, and to Handley's on the spread of cancer. There is an interesting chapter on the cause of cancer. The author, after discussing the various theories (embryonic, parasitic, and biologic), concludes that we are still in the dark. This, however, does not alter the fact that "practical surgeons have to deal with the concrete disease."

There are also new chapters on the tumours of the testicle and ovary.

We have to thank the author and the publishers for placing in our hands such an up-to-date work on the subject—a volume which will prove a veritable “Thesaurus” to both surgeon and pathologist.

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*Surgery of the Rectum.* By FRED. C. WALLIS, B.A., M.D., B.C. Cantab., F.R.C.S. London: Baillière, Tindall & Cox. 1907.

So many books on the special surgery of the rectum have been published in recent years that any addition to the number is apt to be regarded as uncalled for, unless some special plea can be advanced in favour of such addition.

The plea is not wanting in this case, and it may be frankly admitted that the author is entitled to put his special and original views on certain branches of rectal surgery before his professional brethren in such a comprehensive form as he has done in the volume before us.

The subject is dealt with in thirteen chapters, which include separate chapters devoted to ano-rectal ulceration, pruritus ani, anal fissure, rectal and peri-rectal abscess, fistulæ, hæmorrhoids, prolapse, non-malignant ulceration and stricture, neoplasms, cancer, excision of the rectum, colotomy, and the diagnosis of rectal disease.

Of these, the most interesting seem to be those on the inflammatory affections in and around the rectum, and these abundantly justify the issue of the book. The author is still a convinced disbeliever in the view that syphilis is a common (if even, indeed, an occasional) direct cause of rectal ulceration, and he states his opinion on the subject with vigour and effect. Thus he says—“My own personal experience has been that during twelve years I have not seen a single case which by any way whatever I could attribute directly to syphilis.” The view which he first advanced in 1900, viz., “that the most common cause of rectal stricture was septic ulceration,” he still holds to, and probably many surgeons will be ready to admit that such a view is well justified.

The treatment of the remaining portions of the subject is less effective; the cause of this may be found, perhaps, in the fact that the author's own individuality stands out less clearly in them. The concluding chapter on diagnosis, which,

in his preface, the author draws particular attention to, is disappointingly meagre, and, while good in its way, it fails, in our opinion, largely as a result of the obvious attempt to condense it into as brief a space as possible.

The book is exceedingly well illustrated, many of the plates are most effective, and many present distinctly novel and instructive views of the lesions they illustrate.

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*Minor and Operative Surgery, including Bandaging.* By HENRY R. WHARTON, M.D., Philadelphia. Sixth Edition, Enlarged and Thoroughly Revised. With 532 Illustrations. London: Rebman, Limited. 1906.

THE issue of a sixth edition, in response to the obvious demand suggested by the rapid using up of the earlier issues, is sufficient evidence of the usefulness and merit of this book.

The new edition before us has been subjected, in course of its revision, to considerable alteration; its scope has been greatly widened, and, while retaining the general plan of the earlier editions, the portions of least practical utility have been cut down, while a good deal of new matter has been added, notably in extension of the operative portions, to include not a few procedures that involve more than what are generally classed under minor operative surgery. In the main, the additions are well justified, and particularly as regards a number of operations which may from time to time be required in general practice, such as tracheotomy, intubation of the larynx, operations for appendicitis, strangulated hernia, &c. The same justification may perhaps not be sustained in the case of such operations as pyloroplasty, pylorotomy, and the like.

These are, however, points of detail, and do not substantially detract from the merits of the volume. The illustrations are abundant, appropriate, and well reproduced.

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*Selected Essays on Syphilis and Small-pox.* Translations and Reprints from Various Sources. Edited by ALFRED E. RUSSELL, M.D. Lond., M.R.C.P. With Illustrations and Charts. London: New Sydenham Society. 1906.

THE papers and reprints now issued by the Council of the New Sydenham Society are thoroughly representative of the more recent work on the subjects of syphilis and small-pox.



The investigations of Dr. Fritz Schaudinn and Erich Hoffmann occupy a large place in the volume, and the successive papers in which they gradually developed their views on the occurrence of spirochætes in syphilitic lesions and in papillomata, on the occurrence of spirochætes in the fluid obtained from the lymphatic glands in syphilis, on the differences between the spirochæta pallida and other spirochætes, on the biological relationships of the spirochæta pallida, on its presence in congenital syphilis, and on its distribution in the tissues are given in full, or in abstract, in this collected form. The series of papers constitutes a comprehensive record of the facts and teaching in support of the spirochæte theory of the pathogenesis of syphilis.

A full abstract of a paper by Shennan, giving a *résumé* of the now voluminous literature on the subject, with conclusions and references, is also included; and the work of Castellani on the subject of yaws, with special reference to the discovery of spirochætes in this disease, is dealt with in the form of a short abstract of the papers of this observer.

There follow four communications, giving the results of experimental investigations on syphilis by Metchnikoff and Roux, Professor and Director respectively of the Pasteur Institute, Paris. These are translations by W. S. Colman, M.D., of papers which appeared in the *Annales de l'Institut Pasteur* from 1903 to 1905. They deal at length with the work of the observers upon the communicability of syphilis to the anthropoid apes, inoculation of the chimpanzee, of macaque monkeys, from macaque to chimpanzee, and with the whole course of events in these experimental inoculations; in the last paper the general symptoms of syphilis in the anthropoid apes, attempts at preventive treatment, anti-syphilitic sera, negative vaccine experiments, mercurial inunction, the micro-organism in syphilis, and the general conclusions of the authors, are dealt with at length. It is of interest to note that they conclude—“(1) That Schaudinn's spirilla can almost always be demonstrated in primary and secondary lesions, both in man and monkeys; (2) that these spirilla have been demonstrated in cases of syphilis in both hemispheres (Europe and America); (3) that they are present, often in large numbers, in congenital syphilitic lesions in the newborn; (4) that their presence has been demonstrated in the blood by several observers, notably by Noeggerath and Staehelin.” Their investigations have led them, therefore, to homologate pretty much the view of Schaudinn and

Hoffmann regarding the rôle of the *spirochæta pallida*—or, as they choose to term it, the *spironema pallidum*.

The rest of the volume is devoted chiefly to studies on the pathology and the etiology of variola and vaccinia, chiefly in relation to the work of Calkins and Councilman upon the life-history of cytoryctes variolæ Guarnieri. The methods of staining, and the different phases of the life cycle of, the parasite are given, and a full consideration of its biological position follows, with an ample bibliography.

Clinical observations on variola, by Dr. J. R. Bancroft, dealing with the different varieties, certain abortive and irregular types, and regular and irregular rashes, conclude the volume.

The collected papers form a valuable selection from the now extensive literature on the subjects with which they deal.

Appropriate illustrations, micro-photographs, diagrams, and charts add substantially to the usefulness of the work.

[It is of interest to note that during the last four years much of the matter dealt with in these papers—the work on the *spirochæta pallida*, the communications of Metchnikoff and Roux, and the investigations upon the cytoryctes variolæ—has been outlined at varying length in the “Abstracts from Current Medical Literature” of this *Journal* under the sections of Surgery and Pathology.]

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*Aids to the Diagnosis and Treatment of Diseases of Children.*

By JOHN M'CAW, M.D., R.U.I., L.R.C.P. Edin. London: Baillière, Tindall & Cox. 1907.

THE clinical study of the diseases and treatment of childhood bulk now so largely in practice that a scientific work on the subject meets with a merited welcome from the profession. Dr. M'Caw's book has now reached its third edition, which has been improved by the addition of much new matter. Chapters on the Anatomy and Physiology of Infancy and Childhood, and the Diseases Incidental to Birth have been added. The important features of infant feeding and artificial feeding have been fully gone into, as well as diseases of the digestive system. The author points out in a forcible manner the dangers accruing from the unhygienic collecting and distribution of milk from the dairy to the consumer. The section on Specific Fevers is well written, concise, and lucid.

We have derived much pleasure from reading the pages devoted to the Diseases of the Blood. The author points out how the volume of the blood increases *pari passu* with the severity of the disease, owing to an increase of the plasma, and how purgatives in the early treatment are beneficial in reducing the quantity of the plasma. We find no reference to the rate of coagulation of the blood in pernicious anæmia; our observations show that the period is delayed by as much as three or four minutes, whereas in chlorosis it is distinctly accelerated.

The appendix contains an excellent *résumé* of therapeutics. Dr. Mc'Cauley's volume is an epitome of an important subject, which the author has presented in an attractive, well-reasoned, and exhaustive manner, and is a record of painstaking and original clinical work.

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*The Essentials of Chemical Physiology, for the Use of Students.*

By W. D. HALLIBURTON, M.D., LL.D., F.R.S. Sixth Edition.  
London: Longmans, Green & Co. 1907.

THE present edition has been thoroughly revised, and in order to bring it fully abreast of modern knowledge the author has found it necessary to rewrite a good many portions. This applies particularly to the parts which deal with proteins and their fate in the body, with respiration, and with coagulation of the blood. Some changes have also been made in the practical exercises.

The fact that this handbook by such a well-known teacher has reached a sixth edition, may be taken as a sufficient recommendation of its merits.

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*What to Do in Cases of Poisoning.* By WILLIAM MURRELL, M.D., F.R.C.P. Tenth Edition. London: H. K. Lewis. 1907.

THIS little volume is so well known to the medical profession in Britain that no extended notice is required. But it may be mentioned that the demand for the new edition has been taken advantage of by the author to submit the work to a thorough revision, which includes the introduction of a good deal of new matter. Every practitioner who is liable to be called in to treat a case of poisoning ought to have a copy of this book ready to hand in his study.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

## M E D I C I N E.

**The Symptoms due to Cervical Ribs.** By Wm. Thorburn (*Medical Chronicle*, December, 1907).—It is only within the past three years that the symptoms of pressure on the brachial plexus have been recognised as being, in a large proportion of the cases, due to pressure from a cervical rib. In that time the author has seen thirteen such cases, nine of which are recorded in this paper.

Most often these ribs are bilateral, and most often found only in connection with the seventh cervical vertebra; it is very rare to have ribs attached to the sixth vertebra as well. When fully developed the ribs extend outwards, or forwards and outwards, in the posterior triangle of the neck; and they may terminate in a free end, or join on to the first dorsal rib, or first dorsal costal cartilage, or on to the sternum. The shape of the ribs vary considerably in the different cases. The rib may be broad and flat like the first dorsal, or long and thin like the twelfth dorsal. It may be so short as not to be much longer than the transverse process of the vertebra; or may curve right round the neck to join the sternum in front. The direction or situation of the rib in the neck is of importance, for it is only when the rib curves round in the posterior triangle of the neck that pressure symptoms supervene; and the subclavian artery will only come in contact with the rib when it reaches the anterior part of the neck. The subclavian artery and vein, as well as the brachial plexus, pass across a cervical rib so situated, sometimes grooving it, and it is to this anatomical arrangement that symptoms are due. Sometimes there is a slight scoliosis and torticollis, but the chief symptoms are due to pressure on the artery, vein, or nerve. In spite of the fact that cervical ribs are most often present on both sides, the symptoms are usually unilateral, and the right side is more often affected than the left, due probably to the right arm being more in use than the left. The condition, too, is very much more common in women than in men—every one of Mr. Thorburn's cases were women; but the reason for this is not apparent. The symptoms come on usually in early middle life, the youngest case being 17 years of age and the oldest 70. This, doubtless, means that ossification is complete in early middle life, and there is then more resistance in the ribs than at an earlier age. Pressure on the subclavian artery causes weakening of the pulse on the affected side, and this is relieved by raising the arm. There may be gangrene of the tips of the fingers, and arterial thrombosis. A V.S. murmur may be heard over the vessel. The vein is less often affected, and when it is there is œdema of the affected arm. The affected limb feels cold, and looks more cyanosed than on the sound side. The nervous symptoms may be entirely subjective, e.g., pain, and a feeling of weakness in the limb; or there may be paralysis, atrophy, and anæsthesia. In the former case, the one prominent symptom is pain usually referred to one or other arm. There may be degrees of intensity of the pain, but it is usually described as a tingling or numb feeling. It is often aggravated by cold. The distribution is fairly characteristic, being usually referred to the ulnar border of the fore-arm, and extending from above the inner condyle of humerus to the styloid process of the ulna and into the fingers. It thus follows the distribution of the first dorsal, or first dorsal and eighth cervical roots.

When paralysis is present the same roots are seen to be involved. It is usually most marked in the muscles of the thumb, and less so on passing towards the ulnar side of the hand, though generally all the intrinsic muscles of the hand are affected. When spasm is present it is most marked in the muscles on the ulnar side. There is occasionally some weakness in the flexors of the fingers, and the flexor carpi ulnaris may also be involved. There is always atrophy in the affected muscles, and in a marked case the hand becomes the typical *main en griffe*. When anaesthesia is present it has much the same distribution as the pain. The thermal sense seems to be first affected, and the sense of pain is more readily lost than that of touch. It is rare to find complete anaesthesia in these cases.—W. K. HUNTER.

**Purulent Cerebro-spinal Meningitis caused by the Typhoid Bacillus without the usual Intestinal Lesions of Typhoid Fever.** By J. Norman Henry, M.D., and Randle C. Rosenberger, M.D. (*American Journal of the Medical Sciences*, February, 1908).—This patient, a coloured man, aged 34, was admitted to hospital on account of headache, dizziness, constipation, and fever of six days' duration. Careful review of the history showed no illness previous to this. On admission, signs of cerebro-spinal meningitis were noted, and 25 c.c. of turbid fluid, which deposited a heavy purulent sediment, were obtained by lumbar puncture. Examination of the deposit showed 96 per cent polynuclear cells, 2 per cent lymphocytes, and 2 per cent hyaline cells. Numerous bacilli, intracellular and extracellular, were noted. They were chiefly in the polynuclear cells, although a few were also seen in the hyaline forms and lymphocytes. These organisms possessed the morphological and tinctorial properties of bacillus typhosus, and were indistinguishable from it on culture. A similar organism was cultivated from the blood. The patient died three days after admission. The *post-mortem* summary was:—Purulent cerebro-spinal meningitis; cloudy swelling of the liver and kidneys; acute catarrhal enteritis, with enlargement of Peyer's patches. The Peyer's patches were large only in their flat extent, but not raised. They were pale, and showed no signs of ulceration. The mesenteric glands were slightly enlarged, of fleshy consistency, and reddened.

The authors consider that the meningitis was a primary lesion due to the typhoid bacillus.—ARCH. W. HARRINGTON.

**Lack of Gastric Mucus (Amyxorrhoea Gastrica) and its Relation to Hyperacidity and Gastric Ulcer.** By J. Kaufmann, M.D. (*American Journal of the Medical Sciences*, February, 1908).—For several years the author has noted the amount of mucus in the gastric contents after test meals. He has examined several thousand cases one hour after Ewald's test breakfast had been given. In this paper he confines himself to the description of a complete lack of mucus in the gastric contents. The presence of mucus is recognised by the coherency of the contents. This coherency is more pronounced when the mucus is pathologically increased. When no mucus is present the bread particles are distinctly separated, and a layer of clear fluid quickly forms on the top of the bread. Where there is much mucus this separate layer of fluid shows a distinctly slimy character. The rate of filtration, and the appearance of the bread left on the filter paper, are also of assistance. Microscopically, when gastric mucus is present, the different elements of the stomach contents are bound together by the coherent mucus into smaller or larger clumps. The mucus is recognised by numerous myelin drops, which are thoroughly mixed with the starch globules, &c. Under certain conditions the mucus appears fibrillar, or in the form of spirals. When no mucus is present no myelin drops can be seen, and the different elements appear singly, and are each sharply outlined. Lugol's solution gives characteristic pictures. It does not mix with mucus, and therefore starch granules incorporated in mucus remain unstained.

A moderate amount of gastric mucus is found after a test breakfast. Kaufmann has noted complete absence of mucus in a large number of cases. He

concludes that the lining of the stomach is not well covered with mucus when none is found in the gastric contents after a test meal. He is convinced that all the familiar symptoms of gastric irritation are most pronounced in those patients suffering from hyperacidity who have no mucus in their gastric contents. Another observation strengthens this opinion—Lavage, with solutions of silver nitrate (1 in 5,000 to 1 in 1,000), increases the mucus without affecting the hyperacidity, yet relieves the symptoms rapidly.

Kaufmann also considers that the lack of mucus exposes the gastric mucosa to injury, and predisposes to ulceration. Any treatment which brings about increase of mucus helps to heal gastric ulcer. Turck, who succeeded in producing artificial gastric ulcers in the dog, noted during the process of repair a great increase of mycogen cells, to such a degree that even zymogen cells were transformed into mycogen cells. Increase of mucus may thus be a favourable, while lack of mucus is an unfavourable symptom.—ARCH. W. HARRINGTON.

**The Occurrence of Congenital Adhesions in the Common Iliac Veins, and their Relation to Thrombosis of the Femoral and Iliac Veins.** By J. Playfair M'Murich, M.A., Ph.D. (*American Journal of the Medical Sciences*, March, 1908).—The author has examined the iliac veins of 107 individuals. The adhesion consists of a fusion of the anterior and posterior walls of the vein, a diminution or division of its lumen being thereby produced. In many cases it takes the form of a column extending between the two walls of the vein, sometimes circular, and from 1 to 4 mm. in diameter, at other times more oval, its longer diameter reaching as much as 6 mm.; it varies in height and position, in the majority of cases being situated laterally to the median line of the vein, so that the lumen to the mesial side of it is greater than that to the lateral side. In a second type the adhesion occurs at the lateral border of the vein, so that the lumen is merely diminished but not divided. Of this type two subordinate forms are distinguished. In one the adhesion is of a more or less triangular form, its base, corresponding to the lateral border of the vein, measuring from 8 to 18 mm., while its height varies from 5 to 10 mm. in different individuals. In the other the adhesion is a linear one, which produces little diminution in the calibre of the vein, and may readily be overlooked.

In a third type the adhesion is at the mesial border instead of the lateral. This type is rare, but produces a marked reduction of the lumen. In the fourth type a perforation replaces the adhesion, the vein being double for a limited portion of its extent. Examples of this are rarest of all.

Of 107 cases examined, adhesions were found in 35, making a percentage occurrence of 32.7. The most striking fact was the preponderance of adhesions in the left vein as compared with the right, 32 out of the 35 occurring on the left side. As the large majority of thromboses occur on the left side, these figures are very suggestive. Any arrangement tending to interfere with the flow of blood through the veins must act as a contributory cause to thrombosis. M'Murich considers that the adhesions are congenital in their nature, due to the incomplete disappearance of a loop by which the iliac vein in the embryo originally surrounded an artery, probably the umbilical.

—ARCH. W. HARRINGTON.

## SURGERY.

**Disinfection of the Hands.** By Dr. R. Lurzmann (*Zentralbl. f. Chirurgie*, January 1908).—It is a well-known fact that by superficial, mechanical, and chemical disinfection it is impossible to render the hands absolutely germ-free, owing to the well-established fact that in the depths of the skin—in the sweat and sebaceous glands—are germs which cannot be reached by such methods. It is also the case that during an operation, by the

manipulations with the hands and by the natural process of perspiration, these germs may come to the surface. Thus, hands which were sterile at the beginning of an operation may during that operation become a source of danger. Various methods have been proposed and practised in which this danger is tackled—rubber gloves are very popular at the present time, but have very evident disadvantages; in Bier's clinique the hands are coated over with a waxy material, which, however, is corrosive in its action on the tissues, and very slippery and unpractical.

The author, after the above short criticism, goes on to ask for a more thorough attempt at disinfection of the hands themselves. Such a procedure to be effective must, firstly, be an absolute disinfection; secondly, a disinfection extending down to those germs which lie in the depths of the skin; and, thirdly, it must not injure the surgeon's hands. The soap which is employed consists of 5 per cent formalin, 15 per cent benzine, and dermosapol 80 per cent.

That this is a powerful antiseptic is shown by the fact that if a trace of it is added to a culture medium no germs will grow thereon. The large percentage of dermosapol which it contains enables it to reach the depths of the skin. Dermosapol consists of a mixture of cod liver oil (50 per cent), fat, lanoline, glycerine, balsam of Peru, and volatile oils. If some fuchsin is added to it its penetrating qualities can be proved by microscopical sections of the skin into which it has been rubbed.

When the hands were washed in the ordinary way and treated with alcohol and corrosive sublimate (1 in 1,000) it was found that a few germs were always to be found in the small epidermal scales which one could rub off. On the other hand, no germs are found after this new method of disinfection.

In the third place, this method causes no injury or discomfort to the hands.

The details of the whole procedure are as follows:—(1) Mechanical cleansing of the hands for about five minutes in hot running water with a sterile brush and ordinary soap; (2) drying of the hands with sterile gauze; (3) thorough rubbing in of the "formalin, benzine, and dermosapol" for about two minutes; (4) washing in spirit; (5) corrosive sublimate (1 in 1,000) for about five minutes.

This soap is also used for sterilisation of the field of operation.

—ROBERT B. CARSLAW.

## MATERIA MEDICA AND THERAPEUTICS.

**Thyroid Extract in Migraine and Epilepsy.** By Alfred Gordon, M.D. (*The Therapeutic Gazette*, 15th December, 1907).—According to this writer the six epileptic patients whose cases he reports all showed signs of hypo-thyroidisation. Extreme care in selection of their diet, and in regulation of their mode of living, the avoidance of stimulants and intoxicants, and, finally, the bromide treatment, all proved of very little benefit. The institution of the thyroid treatment was followed by marked improvement. Apathy, lassitude, and headache disappeared, gastro-intestinal digestion improved, and epileptic seizures became less frequent. The conclusion arrived at is that idiopathic epilepsy is associated with defective metabolic processes, and that in a certain class of epileptics the seizures are related to disturbance of function of the thyroid gland.

Four cases of migraine are also reported, in which thyroid medication was followed by marked improvement.—ROBERT FULLARTON.

**Treatment of Tuberculosis based on the Antitoxic Action of the Liver.** By E. Gerard and G. Lemoine, Professors of Medicine in the University of Lille (*La Tribune Médicale*, 23rd November, 1907).—The idea which suggested the work reported in this paper was that the liver is the defender of the economy against infections and intoxications,

and that, therefore, from the liver or its secretion antitoxic substances should be obtainable. Experiments were made first with a solution of cholesterine obtained from bile, and, second, with a substance named by the writers paratoxine—a product resulting from the treatment of the liver and bile by certain solvents, specially “ether of petrol.” It was found that of eighteen guinea-pigs injected with tuberculosis, six, which were also treated with cholesterine solution, suffered from a milder form of the disease than six injected but not so treated; while six treated with paratoxine showed during life no loss of weight and much less elevation of temperature and *post-mortem* only a few scattered tubercles in the viscera.

Following this experimental work clinical researches were begun, and continued for about three years, the patients treated being in part indoor and outdoor patients of the Hospital Saint Saviour in Lille, and in part private patients in that town.

The result may be summarised thus:—Amelioration of the general condition; improvement of appetite; increase of weight; diminution or disappearance of sweats; return of temperature to normal limits; diminished frequency and severity of cough; in many cases recovery of ability for work. The cases which benefited most were those of tuberculosis of the first and second degree, even with signs of extensive softening, but progressing slowly and with temperatures below 102° F. The paratoxine appeared inefficacious in cases with high temperatures and in rapidly advancing cases.

Laryngeal tuberculosis and intestinal tuberculosis were also rapidly ameliorated by the paratoxine treatment.—ROBERT FULLARTON.

**The Value of an absolutely Vegetarian Diet in Psoriasis.** By L. Duncan Bulkley, A.M., M.D. (*Journal of American Medical Association*, 22nd February, 1908).—The writer states that among hundreds of carefully made volumetric analyses he has found in the urine of untreated psoriatic patients a greater acidity (two, three, or even four times the normal), a higher specific gravity (1030 to 1040 being not uncommon), and increased urea (even to double the normal amount), evidences of faulty nitrogenous metabolism, or, rather, of an excessive intake of highly nitrogenised foods. His clinical observations of cases of psoriasis, extending over twenty years, have convinced him that this disease “has its foundation in errors in regard to the passage of nitrogenous elements into and out of the body,” and he reports that for many years he has placed numerous psoriasis patients on a strictly vegetarian diet with excellent results.—ROBERT FULLARTON.

**On the Relation of the Parathyroid to Calcium Metabolism and the Nature of Tetany.** By W. G. MacCallum, M.D., and C. Voegtlin, Ph.D. (*Bulletin of Johns Hopkins Hospital*, March, 1908).—This is a preliminary note on a study of the calcium metabolism of animals, in which tetany is produced by parathyroidectomy, and of the relations of various salts, especially those of calcium, to the tetany thus produced.

All violent symptoms produced by parathyroidectomy, muscular twitching and rigidity, tachypnoea, fibrillary tremors, increased rapidity of the heart beat, &c., may be almost instantly cured by the intravenous injection of a solution of calcium salts. The writers usually employed the acetate or lactate in 5 per cent solution. Subcutaneous injection or the introduction of the solution into the stomach is quite effective, but acts more slowly. The condition of complete well-being attained in this way lasts for perhaps twenty-four hours, when tetany may reappear, but disappears immediately upon renewed administration of calcium. Studies of the excreta of parathyroidectomised animals tend to show an increased output of calcium as compared with the control. On the other hand, the analysis of the blood taken from a dog during tetany shows a calcium content which is only about half that of the normal dog on the same constant diet. The hypothesis put forward to explain these results is that the parathyroids control in some way the calcium metabolism, so that upon their removal a rapid excretion, possibly



associated with inadequate absorption and assimilation, deprives the tissues of calcium salts. There arises in this way a condition analogous to that described by Loeb and J. B. MacCallum, who showed that muscular twitching could be produced by the introduction of salts capable of precipitating the calcium in soluble form, and removed by the addition of fresh soluble calcium salts.

It is suggested that this observation will have some therapeutic importance in post-operative tetany, and in the various forms of tetany which occur spontaneously in children, and in connection with infectious diseases, pregnancy, lactation, &c.—ROBERT FULLARTON.

## DISEASES OF CHILDREN.

**Acute Encephalitis in Infancy.** By Dr. J. Comby.—A very full and interesting paper on the above subject appears in the *Archives de Médecine des Enfants* (October, 1907). The history of the disease with its etiology, symptomatology, prognosis, and treatment are all discussed *seriatim*. In addition to reporting in more or less detail some twenty-five cases, which he has personally observed, several examples of the condition are quoted from the literature in the historical section of the paper. The following are his conclusions, which embody the gist of the paper:—

1. The infant's cerebrum, on account of its rapid development and extreme vascularity, is exceedingly susceptible to acute inflammatory mischief. Unfortunately, up to the present time, "acute encephalitis" has been much confused with meningitis.

2. Strumpell, Leichtenstern, Nauwreck, Prickett and Batten, Concetti, Comby, Weyl, Raymond and Chartier have all aided in the elucidation of the malady.

3. The inflammation is either circumscribed or diffuse. It is characterised by congestion, hæmorrhagic infiltration, degeneration of nerve cells, and aggregations of leucocytes around the vessels, the latter giving the appearance of a microscopic abscess. In addition thrombo-phlebitis may be present.

4. Many segments of the brain may be affected at one time, and it may be complicated with poliomyelitis or multiple neuritis.

5. The disease attacks infants of all ages, and may occur even during intra-uterine life. It is often secondary to some infectious disease, as influenza, whooping-cough, typhoid fever, diphtheria, mumps, cholera infantum, or vaccination. Poisoning by CO has also been credited with inducing the disease. As a predisposing factor, a neurotic tendency seems to play some part.

6. The onset is sudden, with violent convulsions, often epileptiform in character, and in many instances frequently repeated. Following the convulsive stage the child lapses into coma, unaccompanied, however, by either rigidity of neck or *tâche cérébrale*. Flaccid or spastic paralysis, choreic or athetotic movements, ataxia and aphasia or mutism may all be prominent symptoms.

7. As sequelæ, in addition to the very frequent paralysis, psychical troubles, as idiocy, mutism, and epilepsy, are found. In some cases, however, the child becomes possessed of a most extraordinary memory, or some of the special senses may be unduly developed.

8. The condition can be grouped into three classes, according to the severity—(a) Benign form, recovering completely without any sequelæ; (b) severe form, terminating with paralysis, contractures or spasms, all of which, however, may be ultimately recovered from in time, especially with appropriate treatment; (c) very grave cases, which either terminate fatally or have as sequelæ such incurable maladies as cerebral sclerosis and epilepsy.

9. The prognosis, of course, varies with the severity, but is invariably much

better than in meningitis. In acute encephalitis, complete, or at least partial, recovery is the rule; while in meningitis such is the exception.

10. The diagnosis rests on the sudden onset with convulsions, and from the habitual absence of rigidity of the neck, Kernig's sign, *tâche cérébrale*, vomiting, and constipation it can be differentiated from meningitis.

11. Lumbar puncture is of great help in the diagnosis. In acute encephalitis the cerebro-spinal fluid is unaltered. It is clear in colour, and contains neither cells nor organisms.

12. Treatment in the acute stage consists in the use of cold baths or wet packs, and soothing rectal injections, containing bromide or chloral, may be useful. Ice to the head and leeches over the mastoid processes may also be of benefit. Later, K.I., and for the mental defects and paralyses re-education of lost senses may be of great value, and result in complete recovery. During the entire illness the diet must be bland and fluid.—LEONARD FINDLAY.

**Anatomical Lesions of Diffuse Spinal Amyotrophy in a Newborn** (*Archives de Médecine des Enfants*, January, 1908).—Drs. P. Armand-Delille and Bondet report the *post-mortem* findings in the case of a child aged 6 months. Dr. M. Comby had observed the child during life, and the present authors quote his clinical report of the condition of child from *Arch. d. Méd. d. Enfants*, September, 1905. The child was born of healthy parents. At birth he was apparently quite healthy, and developed normally until the age of 2 months. Until that time he had moved his limbs quite freely, but since then there had developed a steadily increasing paralysis of both arms and legs. At the age of 5 months, when he first came under observation, he was plump and healthy looking, with an active and intelligent expression. The four limbs were completely paralysed, as also his intercostal muscles, respiration being entirely diaphragmatic in type. Through the subcutaneous fat it was impossible to detect any muscular tissue. The sphincters were intact. Sensation was normal. All reflexes were abolished, with R.D. of practically all muscles. The child was subject to attacks of asphyxia, and during one of these, while on a visit to hospital for electrical treatment, he was admitted to the ward. Later he developed bronchopneumonia, and died suddenly from syncope.

At the autopsy the muscular atrophy was found to be extreme, the muscles being merely represented by whitish fibres, difficult of identification, amongst the adipose tissue. The nerve trunks appeared normal, as did also the brain and cord, but the anterior roots were abnormally slender. Histological examination of several muscles verified the extreme atrophy in the great thinning of the fibres, the absence of fibrillation, and the abundance of nuclei. Some fasciculi were completely replaced by connective tissue. The diaphragm had, however, preserved its integrity. Examination of the motor nerves showed that many of the fibres had disappeared, others were degenerate, and only a minority were healthy. The sensory nerves examined were, on the other hand, quite healthy. The anterior spinal roots were atrophied, the fibres had either disappeared or were in a state of degeneration, contrasting markedly with the posterior roots and ganglia.

It was in the anterior horns, however, that the initial and characteristic lesions were noted. Here there was a marked atrophy of the radicular cells; and this became more marked as one passed from above downwards. Many cells had disappeared, others showed marked chromatolysis and atrophy. There was a certain degree of interstitial fibrosis, but no evidence of any vascular lesion. The posterior horns and white matter presented no abnormality, and the meninges were quite healthy.

From the above histological findings the authors diagnosed the condition as "subacute diffuse poliomyelitis."

Werdnig, Hoffmann, and Thomson and Bruce have all reported similar cases, but in children over 3 years of age.

Regarding the etiology, the authors could find no evidence of syphilis. The explanation of the condition rested, in their opinion, between the selective

action of some unknown toxin and defective development with tendency to premature decay of the cells in the anterior cornua.—LEONARD FINDLAY.

**Case of Tuberculous Meningitis, with Apparent Recovery.** By Dr. Firmin Carles (*Archives de Médecine des Enfants*, February, 1908).—The case was that of a female child, aged 3 years, who came under observation suffering from headache, vomiting, constipation, and rapid emaciation of about twenty days' duration. The child was comatose and extremely emaciated, with retracted abdomen and some rigidity of the neck. All the superficial glands were enlarged and movable. The pulse and respirations were both irregular in rhythm. *Tâche cérébrale* could be easily demonstrated, and the reflexes were difficult to elicit. Kernig's sign was not present. Lumbar puncture was performed on three occasions, and the fluid always showed a characteristic lymphocytic deposit, but no bacteriological examination was made.

One month after admission the child developed measles, and two weeks later broncho-pneumonia and whooping-cough. From these complications she, however, slowly recovered, and when last seen, some eleven months after first coming under observation, she was in excellent health.

—LEONARD FINDLAY.

**Some Experiences and Observations on Congenital Syphilis in Infants.** By Dr. George Carpenter (*The British Journal of Children's Diseases*, February, March, April, 1908).—In a paper of great interest Carpenter deals at considerable length with a number of "diagnostic problems of interest to the clinician," and he does so in great part from the standpoint and outlook of his own valuable personal observation and experience. In the February issue he deals with such subjects as chronic "snuffles," cranio-tabes, Parrot's nodes, syphilis as a rickets producer, syphilitic epiphysitis, syphilitic splenomegaly, syphilitic enlargement of the liver, and he does so in a manner which justifies the following somewhat lengthy and detailed reference. The most interesting portions of the paper under review are undoubtedly those dealing with the differential diagnosis of certain of these lesions variously regarded as of syphilitic or rachitic origin.

Chronic "snuffles" of the anterior variety is easily recognised; there may, however, be a chronic "snuffles" localised to the posterior nares and to the naso-pharynx, the discharge, perhaps, passing altogether backwards, and being swallowed. Gastou has attributed to the swallowing or insufflation of such infective matter the causation of the common fatal issues from diarrhœa, vomiting, marasmus, broncho-pneumonia, the actual agent being either streptococci (Gastou) or, just as likely, the specific germs. This concealed form of "snuffles" calls, just as much as the other variety, for energetic local treatment.

Cranio-tabes, as a manifestation of congenital syphilis, is not yet accurately described and defined, nor can either the situations chiefly affected, or the time of its occurrence, be said even now to be determined beyond dispute. Much disagreement still exists. In 95 per cent the parietal bones (behind the eminences) are attacked; in 60 per cent they are solely affected; in less than 3 per cent the occipitals suffer. Carpenter has never seen the frontal bone alone affected, though other bones are occasionally involved. Cranio-tabes is oftenest found in the second and third months, comparatively seldom (and progressively decreasing month by month) after the sixth month, i.e., in the *syphilitic age* cranio-tabes is common; in the *rickety age* (from ninth month on) the reverse is the case.

Cranio-tabes is found in syphilitic fetuses and in syphilitic infants, either as an isolated lesion, or in association with marked anæmia (responding to mercurial treatment), or associated with chronic "snuffles" (a common combination). Mercurial treatment may quickly cure the condition, or it may do so only slowly; at times it fails to produce substantial result. Carpenter believes that cranio-tabes is produced by syphilis during the syphilitic age, and that it is just as much a symptom of the complaint as an enlarged liver

and a swollen spleen. Like these, however, it is not pathognomonic, for cases are not few in which our present clinical methods fail to establish a syphilitic basis, however much it may be suspected, and in some cases even the suspicion can hardly be said to exist.

Further, the more rickety the infant the less likely is it to be cranio-tabic. Cranio-tabes does occur in the rickety age, it is true, but it does so infrequently. Yet rickets is a common disease. Sporadic cases of congenital syphilis occurring in the rickety age may be regarded as relics not wiped out in the syphilitic age (the first six months), and persisting even through the succeeding six months. Syphilis may continue in operation after its recognised manifestations should have passed away, and so continuing, the characteristic effects may only now and again become outwardly manifest.

In some infants cranio-tabes disappears, and rickety changes persist and even increase. Carpenter has seen cranio-tabes recover and give place to Parrot's nodes. He comments on the see-saw of opinions on the subject of cranio-tabes, and affirms his entire disbelief in its being of rachitic origin. "Whenever I find cranio-tabes in an infant," he says, "I suspect syphilis; but I must admit that my suspicions are not always verified by the test of mercurial treatment." "But the suspicion is a good working hypothesis."

*Parrot's nodes* occur in the rickety age, not like cranio-tabes, in the syphilitic age, i.e., in a period when the evidence in support of a syphilitic basis may be of the scantiest. Also, the condition does, as a rule, develop in rickety children, sometimes in cases where rickety manifestations are not very prominent, at other times in cases of a most pronounced kind. Carpenter has, however, seen the characteristic nodes in what he regarded as quite rickets-free subjects.

Cranio-tabes, though not often found in association with Parrot's nodes, he has met with so associated on three occasions out of forty cases. He states, as a striking fact in regard to Parrot's nodes, that although, by reason of the time incidence, syphilitic evidence is usually wanting, still 57.5 per cent of his cases were undoubtedly syphilitic.

Half of his cases were marked also by splenomegaly. One case was the child of a woman suffering from congenital syphilis.

Parrot's nodes are to be regarded as a syphilitic manifestation, not as a rickety one. "It is allied to the periostitis which occurs in the long bones of infantile syphilitics" . . . "either in association with epiphysitis (osteochondritis) or without that condition."

*Syphilis as a rickets-producer.*—Carpenter has no data of his own supporting the possibility of rickets arising in syphilitic children in the first six months of life. He has seen rickets develop in syphilitic children fed on the breast alone—*prima facie* evidence of the syphilitic virus being the producer, though it is undoubted that rickets does occur in non-syphilitic breast-fed children where lactation is unduly prolonged. Beaded ribs occur in non-syphilitic infants, and are not special to the syphilitic. Indeed, beading of the ribs of minor degree he is more and more disinclined to regard as an important sign of incipient rickets. Though hitherto inclined to regard syphilis as a rickets-producer, he admits the weakness of the case as regards clinical proof. Like other children, syphilitic infants may become rickety if improperly fed. A recent pronouncement by Marfan (*Semaine Méd.*, 1907, p. 469) is quoted. Marfan thinks it would be a mistake to deny syphilis any share in the etiology of rickets. He holds that syphilis by itself is sufficient to produce rickets, and is not merely a predisposing cause as Fournier thinks. The characters of syphilitic rickets are—(1) its early appearance—congenital, or starting in the first three or four months of life; (2) its remarkable cranial lesions, especially cranio-tabes, and the natiform skull; (3) marked anæmia; (4) chronic hypertrophy of the spleen. Alimentary rickets hardly ever shows before the sixth month, is not well marked before the second year, affects the limbs more than the skull, and is often associated with digestive troubles and a big belly. Anæmia is less marked, and splenomegaly is much less frequent than in syphilitic rickets.

*Syphilitic epiphysitis.*—Only in one case—a syphilitic infant, aged 2 or 3 months—has Carpenter seen a pronounced costo-chondral enlargement, and he thinks this was probably an osteo-chondritis, rather than rickets. In the absence of periosteal extension up the shafts of the bones, syphilitic epiphysitis is much like a ricketty enlargement. Incompleteness of the encircling collar of enlargement, pseudo-paralysis, separation of epiphysis from diaphysis—the occurrence of any one of these puts the diagnosis beyond all doubt. Most of Carpenter's cases of epiphysitis have been in the first three months of life, but he has seen examples also in the ricketty age.

*Syphilitic splenomegaly.*—This occurs in syphilitic fetuses, and also in the earlier years of extra-uterine life. Splenic enlargements are met with chiefly during the first six months of life, and from the first to the end of the third year. From the sixth month to the twelfth there is a lull in splenic excitability. Many of the cases occurring during the first six months (the syphilitic age) are unquestionably syphilitic. Estimates of the frequency of splenomegaly in this disorder vary greatly—Carpenter found it in 40 per cent of his cases; other observers give considerably higher figures. Though rickets, being practically absent during the syphilitic age, may be put out of account as a factor in causing the splenomegaly, it is possible that other poisons, besides the syphilitic virus, may account for a certain number of the splenic enlargements.

Met with once again in increasing frequency during the ricketty age, splenomegaly can, perhaps with less show of reason, be attributed to syphilis. Yet some of these cases are unquestionably syphilitic. Carpenter believes that splenomegaly is an *epiphenomenon* in rickets—not due to rickets *per se*. In the ricketty age, also, other influences probably play some part in producing splenic enlargements. The spleen is sensitive, and readily responds to a variety of *known* infections—tubercle, enteric, pneumonia, &c. Probably other *unknown* infections have similar spleen-swelling propensities. The important point to the clinical physician comes to be, "What interpretation to place on the doubtful case?" "What is the significance of splenomegaly?" Take, for example, the common association of splenomegaly and Parrot's nodes. Carpenter regards the enlarged spleen in these cases as syphilitic. Or, take the association of splenomegaly with chronic "snuffles," or cranio-tabes, or both. "If these symptoms occur with anemia, and if the anemia and cranio-tabes respond to the mercurial test, then there can be no question as to the significance of the enlarged spleen." But suppose the treatment is disappointing, what are we to conclude? Is the test of trial by mercury competent to decide the question? Many problems connected with the incidence and interpretation of splenomegaly are cited by the author, but he admits their present insolubility, and suggests that at anyrate "no harm will be done when an enlarged spleen is discovered by being suspicious of syphilis." "A suspicious attitude of mind should make the clinical examination of the child more thorough, not less searching."

*Syphilitic enlargement of the liver.*—If anything, this is even more common than is splenomegaly, and much that has been said of the latter applies also to this. Commonly enough found clinically, it is rare to find ascites, jaundice, or naked-eye alterations after death. Diffuse cellular infiltration (interstitial hepatitis) is the usual form of attack, varying in degree from the slightest leucocytal invasion of the portal canals and of the periphery of the hepatic lobules, to a pronounced fibro-cellular invasion of these parts, with destruction of liver cells. The vascular walls are infiltrated, and there may be gummata, microscopical in size or of size appreciable by the naked eye (miliary syphilomata of Wagner). The latter are, however, somewhat rare in infants. If the portal infiltration is considerable, the liver shows unmistakable naked-eye change. It is large and hard, or elastic and indiarubber-like. Its edge is rounded, its colour on section is yellow, or flint-like, and pale. "Indurated livers are rarely encountered clinically; on the other hand, it is reasonable to assume that the enlargements which are so common in this disorder are, in some cases at least, owing to less pronounced changes of the same character."

—ARCH. YOUNG.

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- Abdominal Tuberculosis, by A. Ernest Maylard, M.B., B.S.Lond. London: J. & A. Churchill. 1908. (12s. 6d. net.)
- Truth: Experimental Researches about the Descent of Man, by H. M. Bernelot Moens. London: A. Owen & Co. 1908. (1s.)
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- The Edinburgh Stereoscopic Atlas of Obstetrics, edited by G. F. Barbour Simpson, M.D., F.R.C.P.E., F.R.C.S.E., and Edward Burnet, B.A., M.B., Ch.B. With a Preface by Professor Sir J. Halliday Croom, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E. In four sections, each containing 25 subjects, with descriptive text. London: The Caxton Publishing Co. 1908. (Price for the four sections, 84s. net.)
- Verhandlungen der Berliner medizinischen Gesellschaft aus dem Gesellschaftsjahre 1907. Band XXXVIII. Berlin: Druck von L. Schumacher. 1908.
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*The following, published by J. F. Bergmann, Wiesbaden, are obtainable from F. Bauermeister, Glasgow:—*

- Urologisch-Kystoskopisches Vademecum, von Richard Wohlaue, Berlin. Mit 34 Abbildungen. 1907.
- Die Therapeutischen Leistungen des Jahres 1906. Ein Jahrbuch für Praktische Aerzte. Bearbeitet vom Herausgeber Med. & Chir. Dr. Arnold Pollatschek und Med. U. Dr. Heinrich Nádor. XVIII. Jahrgang. 1907.
- Lehrbuch der Topographischen Anatomie für Studierende und Aerzte, von Dr. H. K. Corning. Mit 604 Abbildungen, davon 395 in Farben. 1907.
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 18TH APRIL, 1908.**

	WEEK ENDING			
	Mar. 23.	April 4.	April 11.	April 18.
Mean temperature, . . .	43·0°	44·0°	44·1°	43·6°
Mean range of temperature between day and night, . .	22·8°	17·8°	25·2°	32·3°
Number of days on which rain fell, . . . . .	5	5	1	1
Amount of rainfall, . ins.	1·70	1·05	0·13	0·09
Deaths registered, . . .	357	360	347	296
Death-rates, . . . . .	21·7	21·8	21·1	18·0
Zymotic death-rates, . . .	3·6	2·3	2·9	2·4
Pulmonary death-rates, . .	6·4	6·1	6·4	5·5
DEATHS—				
Under 1 year, . . . . .	65	63	81	72
60 years and upwards, . .	85	94	73	56
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	45	23	32	23
Scarlet fever, . . . . .	1	1	2	2
Diphtheria, . . . . .	1	3	6	1
Whooping-cough, . . . .	13	11	7	13
{ Fever, . . . . .	1	...	...	...
{ Cerebro-spinal fever, . .	3	5	5	4
Diarrhoea, . . . . .	12	11	4	6
Croup and laryngitis, . .	...	1	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	68	71	83	65
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Cerebro-spinal meningitis, .	13	7	8	6
Diphtheria and membranous croup, . . . . .	17	22	25	18
Erysipelas, . . . . .	20	26	15	14
Scarlet fever, . . . . .	53	51	55	30
Typhus fever, . . . . .	...	...	2	...
Enteric fever, . . . . .	7	8	2	4
Continued fever, . . . .	1	...	...	1
Puerperal fever, . . . .	2	1	...	3
Measles,* . . . . .	596	544	386	275

\* Measles not notifiable.

THE  
GLASGOW MEDICAL JOURNAL.

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No. VI. JUNE, 1908.

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ORIGINAL ARTICLES.

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A MEANS OF OBSERVING AND RECORDING THE  
EFFICIENCY OF URINARY DISCHARGE *PER*  
*URETHRAM*, WITH DIAGRAMS OF ILLUSTRATIVE CASES.<sup>1</sup>

By A. N. M'GREGOR, M.D., F.F.P.S.G.,  
Senior Assistant Surgeon, Glasgow Royal Infirmary.

THE rate of the normal effluent through the urethra has not apparently been determined. We have much information as to the shape and size of the urethra, and as to its dilatability, but no data giving the rate of the discharge of urine either in health or disease, nor figures from which that knowledge can be calculated. Obviously, when a patient complains of stricture, his chief symptom is that of delay in emptying his bladder. He may, or may not, know the cause of the delay, but he is conscious that the discharge of urine is less than it used to be. Usually the act of micturition is so protracted, by the time the patient seeks advice, that it has become burdensome. He desires,

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 17th January, 1908.



therefore, to have the function of his urethra, as an outlet for the urine, restored.

The minor impairments of urethral efficiency are usually unnoticed by the patient in the early stages. Under normal conditions the duration of the act of micturition varied with the quantity of urine contained in the bladder, the circumstances attending the act, the use of voluntary effort, temperature, atmospheric conditions, and many other influences. Unless special attention was drawn to his urinary apparatus, as in the treatment of urethral injuries or disease, he would pay no special attention to the function of urination until the act was so frequently protracted that it became an annoyance. So, too, it is a common experience that a patient undergoing treatment for stricture is indefinite in his statements as to progress. He may say that he is better than he was before his urethra was dilated, but not so well as he was on the day after dilatation; and his comfort in micturition may have varied so much from day to day that he cannot really say whether his condition is improved or not. His report, unless it be, happily, of considerable improvement, is of little value to the surgeon, who forthwith proceeds to estimate the diameter of the urethra by means of instruments.

There is frequently a considerable discrepancy between the patient's idea of his condition and the result of the surgeon's measurement. Among the many causes of this disparity, the lack of knowledge on the part of the patient of his normal condition may be mentioned, as well as the means adopted by the surgeon to arrive at a knowledge of the position and extent of the stricture, together with his estimate of what the minimum natural diameter of the urethra should be. There are many other disturbing causes, such as spasm, granulomata, and impairment of the bladder muscle, which demand attention when present, and which can be recognised by suitable methods.

It is the custom of all clinicians to estimate the function of the organ or structure which has been injured or diseased. The freedom of movement of a joint, and its limitations, are features which may not be overlooked in any enquiry into the usefulness of that structure, nor would a physician consider his examination of the digestive system complete without information as to the biliary secretion, and its passage into the duodenum, &c. Indeed, as in the subject under discussion, loss of function is usually the reason why attention is drawn to an organ.

Our knowledge of the shape, size, and capacity of the

urethra has been gained by many observers, and by many methods of observation, mostly mechanical; but not one of them affords an immediate answer to a question as to the rates of the normal effluent. The shape of the urethra has been well known since Reybard took his plaster casts of bladder and urethra. The diameter of the meatus is no longer taken as the guide to the diameter of the rest of the urethra.<sup>1</sup> The work of Otis has disposed of that fallacy. His urethrameter showed diameters of urethra far in excess of previous knowledge, and his enthusiastic follower in this country, Lockwood, got results still greater.

The Otis formula for finding the diameter of the urethra was the outcome of much investigation, and, though its figures are considerably in excess of what we now accept, it was a noted improvement on pre-existing notions.

"If the flaccid penis has a circumference of 3 inches the urethra measures at least 30 mm., and for each eighth of an inch increase in the size of the penis the urethra will increase 1 mm."

*E.g.*, if the penile circumference is  $3\frac{1}{4}$  inches, the urethral circumference will be 32 mm.; if  $3\frac{1}{2}$  inches, 34 mm. That these figures are in excess of those usually adopted in this country is probably due to the high readings of the urethrameter. It is urged that that instrument gives the distensibility of the urethra, or the limitations due to the resistance of denser structures outside of the urethra, and not the normal diameter.

Then, too, the suggestion that the size of the penis should be taken as an indication includes an obvious source of error.

Measurements with the *bougie à boule*, or acorn bougie, are more apt to give normal readings, and they are of more general application in practice. It must be noted, however, that where the meatus is small it should be incised to allow of the passage of instruments large enough to measure the wider portions of the urethra. Many forms of solid and expanding instruments have been used for measurement.

In the search for exact measurements, it seems that most observers have lost sight of the function of the urethra. A fairly extensive course of reading has failed to discover any record of attempted measurement of the rate of the urinary flow. It is admittedly a difficult task to accomplish. It is beyond the formula in physics  $E = 0.62 A \sqrt{2gh}$ , employed to find the effluent through a narrow aperture, because it is impossible to estimate the amount of "head."

<sup>1</sup> Henry Hancock, *On Stricture*, 1852, p. 67.

The amount of muscle force employed is also an unknown quantity, and the supplementary and voluntary force used by any individual case cannot be estimated. There are also the additional factors of nervousness, varied character of the urine (irritant or bland), and reflex spasm.

Then, too, the elasticity of the urethra, its varying direction, and its differences of density of the structures through which it passes (prostate, triangular ligament, bulb, &c.), are all elements which absolutely prevent a physical calculation.

In spite of these considerations, however, and in view of the absence of precise data from other sources, we cannot afford to exclude any information obtainable from the patient by some system of estimating the efficiency of the urinary outflow through the urethra.

The patient complains that he takes longer to pass water than formerly, and, in so stating his case, makes an observation that may well form the basis of more precise information. He does not generally apply for treatment until the duration of the act is so long that it is forced upon his attention. The minor degrees of obstruction were variable with the quantities excreted, and were not remarked. His attention being directed to the urethral inefficiency, he complains of the slowness of the act, but he cannot tell you how long it took him to pass water when in health.

A short digression will explain the origin of a system devised for the purpose of measuring the quantity of urine passed in a certain time, to be afterwards discussed.

It often happens that a patient is asked to state his impression of his progress during the treatment of a stricture, and most surgeons are familiar with the vague and somewhat indefinite answers to the query. The patient may be aware that the act of micturition is somewhat longer, may acknowledge that sometimes it is not duly prolonged, but cannot say whether the bladder was full at the time, or whether voluntary pressure was employed.

Conscious of this difficulty, a patient of mine set himself to devise a means of gauging the rate of progress and the patency of his urethra, and succeeded. His statements became precise, and he was able to compare the effects of different dilatations. A tentative challenge of his statements, though they were verified by the use of bougies, led to the production of a chart of observations, extending over some months.

Being a man of regular and methodical habits, he selected the first micturition of the morning as the most suitable, for he judged that the urine at that time would be most

uniform in quality and quantity, and there were the additional reasons that bath time was most convenient, that he was less likely to be hurried than at other times, and so less likely to use voluntary pressure.

He procured a glass vessel graduated to measure 4 ounces in drachms. Standing with this in position to receive the urine, and so placed that on withdrawal of the measure the urine would flow into another receptacle, he allowed the urine to flow into the glass for five seconds from the commencement of the act, and then immediately withdrew it.

The amount in drachms was read off, and noted on the chart. This chart was a sheet of paper with quadrille ruling. The numbers 0 to 32 from below upwards were on the left margin, and the dates were along the base line. Subsequently the even numbers only were marked, the odd figures being indicated by dots in the spaces, and found to give sufficient projection.

Experiments with other patients, whose ailments were not connected with their urinary systems, showed that the quantity of urine passed in five seconds was a fairly constant figure, and that it varied principally with the quantity of urine contained in the bladder at each act of micturition (N<sup>1</sup>).

Analysis of the charts shows that considerable variations occur throughout the day, probably due to haste and pressure, but that the record of the first micturition of each day bears a direct ratio and almost constant proportion to the amount of water contained in the bladder. Taking the average quantity of water at 8 oz., the rate of discharge amounts to 32 to 40 drachms per five seconds.

It may be mentioned, for the sake of comparison, that the results for 8 oz. of urine are equal to the amount of water passing through a rubber tube of 6 mm. diameter, with a fall of 6 inches from a cistern containing 1 pint, viz., 40 drachms in five seconds. The inner diameter of the rubber tube is almost equivalent to the outside measurement of a bougie of 20 (Charrière), and so it would seem that a weight of 1 pint falling 6 inches approximates the force employed to expel 8 fluid oz. of urine through a tube of similar diameter. These figures have not been checked over a sufficiently large number of cases to render them definite, but they are suggestive.

Three charts are shown of normal cases. Those marked N<sup>1</sup> and N<sup>2</sup> are from the same observations. N<sup>1</sup> shows the rate of discharge in drachms per five seconds at each micturition throughout the day for eighteen days—black lines—together with the quantities of urine at each evacuation—

dotted lines—in ounces. In the second chart the morning observations of the previous chart have been selected in order to show the greater uniformity of the ratio between the total quantities of urine with the rates of discharge. In both charts an error of observation or record is seen on the fourteenth day. The third normal chart (N<sup>3</sup>) illustrates how an amount of voluntary pressure, if not guarded against, may vitiate the results; and yet the correspondence between the quantity of urine passed at each evacuation and the rate of discharge is well seen. Experience has shown that the records of patients suffering from urethral troubles are more reliable than those of patients who provided the normal records.

The first chart of a stricture case (S<sup>1</sup>) shows that from 9th to 14th November the rate of discharge was from 5 to 7 drachms in five seconds: dilatation to No. 20 E gave an immediate increase to 34, lapsing on the third day afterwards to 18, a temporary improvement and a fall to 14, which figure was maintained till the next operation, five days later. The second dilatation to size 20 E was followed by an equally unfavourable result, but ten days later a dilatation to 16 E resulted in a marked improvement, so that during the ensuing thirty-five days the rate never fell below 25, being, indeed, over 30 for about twenty days. This chart demonstrates that over-dilatation gives less satisfactory results than more moderate distension. It is, indeed, probable that a traumatism produced by the large bougie was followed by a local catarrhal swelling.

Chart S<sup>2</sup> shows a similar result, and it is interesting to note that in both there is an immediate decline in the rate of the flow on the day after operation with the large instrument, followed by a slight improvement; whereas, with the smaller instrument, the maximum rate is maintained for a day or two, and then followed by a very gradual decline.

Charts S<sup>3</sup> and S<sup>4</sup> were taken from the same patient, an interval of one month intervening. The case was one of spasmodic stricture in which the No. 12 E bougie was passed at frequent intervals, as indicated at the top of the chart. The urinary difficulty was so great that on several occasions nothing more than a dribble could be obtained. These occasions are indicated by the crosses in the lower part of Chart S<sup>3</sup>. In order to check these observations, I measured the amounts of residual urine at each visit, and the Chart R.U. shows the amounts of residual urine in drachms as compared with the total quantities in ounces. The dates of these two charts are

identical, and there can be no more striking illustration of the value of estimating the amount of residual urine in stricture cases. The charts also demonstrate the beneficial effects of repeated moderate dilatations at short intervals in this class of stricture.

Chart S<sup>5</sup> is taken from a case in which two months elapsed between the operations, and it shows that dilatation to No. 16 E gave a good result, the outflow maintaining a rate of over 28 for nearly a month.

Chart S<sup>6</sup> is from a case of chronic multiple stricture of twenty years' duration. There is no note of the rate of urinary discharge before operation, but the fact that a filiform guide was necessary to the passage of the dilator indicates that the strictures were very tight. The largest instrument passed was a No. 12 E. The man did not report himself for nearly a month, and he accounted for the omissions in his record by relating the history of an injury to his scrotum and testicle, followed by an orchitis. After reporting himself cured of the results of that accident, he resumed observations, with the results shown on the chart. Only one dilatation was performed. The man was not seen after he reported himself on 3rd July, the chart being returned by post. He was a hairdresser, and enquiry elicited the information that he had been dismissed from his employment, and that he had disappeared. The chart affords good evidence of the accuracy of the observations even when made by a person of that class.

It was noted in the earlier experiments with normal urethrae that the rates of discharge were apt to vary when the first part of the micturition was measured, and the instructions were modified so as to avoid this difficulty. In the later observations the method was to interrupt the stream, when it was well established, by pressure on the urethra, to place the measure in position, allow the flow to continue for five seconds, and then to record the result. The use of digital pressure obviates the somewhat erratic action of the ordinary controlling apparatus when voluntarily called into action, and a more regular stream is obtained for the purpose of measurement.

The method just described and the accompanying charts, particularly those of stricture cases, demonstrate the possibility of estimating and recording the rate of the urinary discharge, and the efficiency of the urethral canal as an outlet for the urine. Experience has shown that the average normal rate of discharge is from 32 to 40 drachms in five

seconds, the latter figure being equal to the rate of discharge after use of a 20 F (13 E) bougie. Persons who have suffered from stricture for a considerable time are satisfied with a rate of 20, and it is evident that individuals vary. The charts show that a dilatation to 16 E (24 F) gave a capacity of 32 to 36, that distension by larger instruments in some cases gave no greater capacity, and that in the case of spasmodic strictures a like result may be obtained by the frequent passage of bougies of No. 12 E (18 F) size. A comparison of the results of this mode of estimating the amount of strictures, and that of measuring the residual urine is most interesting, and the records agree completely in their estimates when the urethral efficiency is markedly below normal.

It is not suggested that the more precise information obtained by urethrametry or urethroscopy is superseded by this means of ascertaining the function of the urethra, but rather that a method is available by which a patient's progress can be recorded in the intervals between his visits to the surgeon; and that a graphic chart of the effects of different operations may be obtained with considerable accuracy. Such information, in addition to the use of suitable instruments, and the measurement of residual urine, will be found most useful in the treatment of individual cases, and well worth the trouble of investigation.

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## ŒSOPHAGOSCOPY.<sup>1</sup>

By ROBERT FULLERTON, M.D.,

Surgeon, Out-door Department for Diseases of Throat and Nose,  
Glasgow Royal Infirmary.

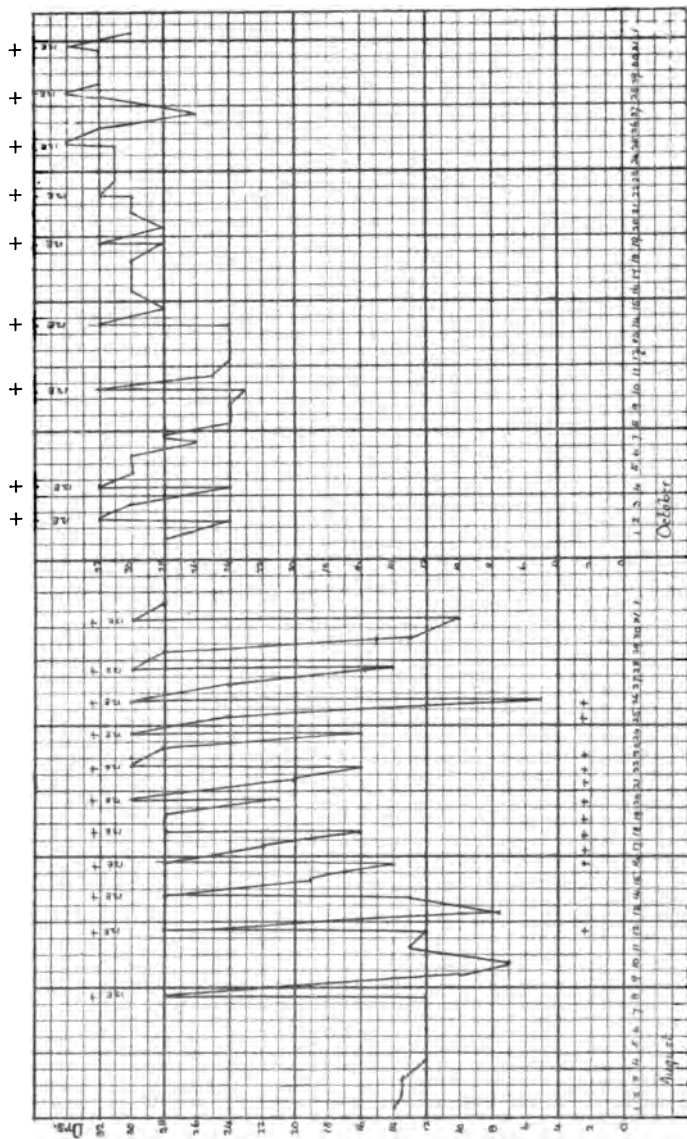
ŒSOPHAGOSCOPY, direct laryngoscopy, and tracheoscopy may be placed in the same category—the technical difficulties met with are similar in all of them—so that in taking up the subject of œsophagoscopy I feel that I am well within my province, and not unduly encroaching on the domain of the general surgeon.

The practice of œsophagoscopy will probably never become very general or popular, as it involves much time and care, and the cases requiring its aid are comparatively few in number. Our duty, nevertheless, is to adopt any means that

<sup>1</sup> A lecture-demonstration at the Greenock Faculty of Medicine, 26th February, 1908.

S<sup>3</sup>, 4

# STRICTURE OF URETHRA.

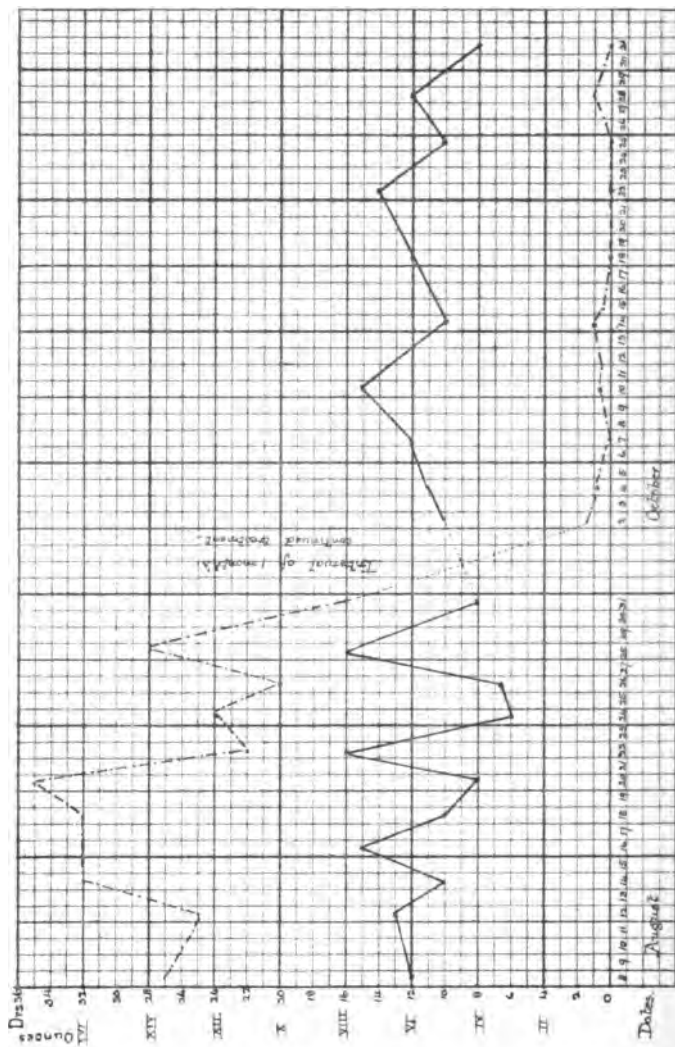


+ Indicates dilation by bougies; the number is that of the largest bougie passed.

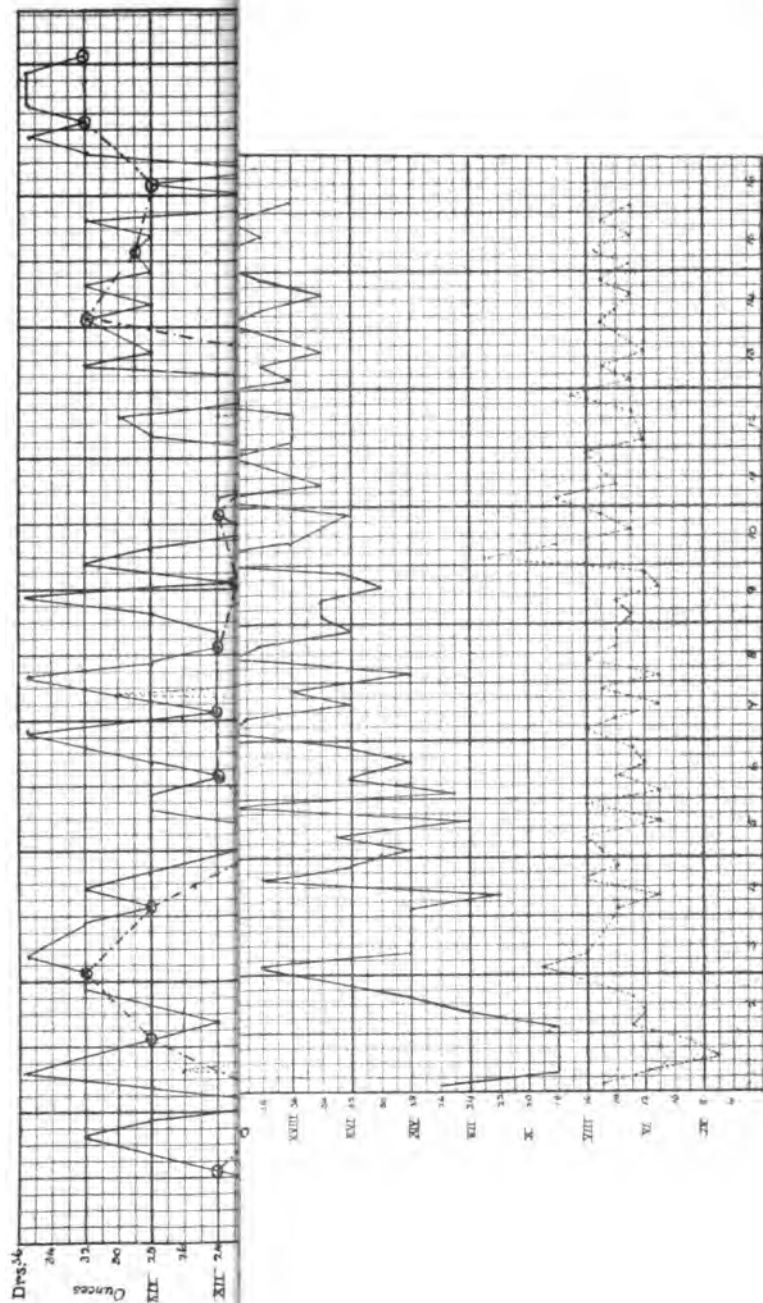




RU<sup>1</sup> CHART SHOWING THE DIMINUTION OF RESIDUAL URINE FOLLOWING FREQUENT DILATIONS,  
AS SHOWN IN CHARTS STR. 4 AND 5.







— Plain line = drachms of urine passed in five seconds at four periods daily.

..... Dotted line = ounces of urine passed at each micturition.



may be of service to us, and I regard it as a step in the right direction, and one the importance of which has hitherto not been sufficiently recognised in this country.

No one will gainsay the importance of an early and correct diagnosis in any class of case, and in this respect it can be of the greatest assistance to us in dealing with pathological conditions of the gullet. In many cases, no doubt, our diagnosis having been made, we have to halt there, and can in no way influence the ultimate issue; but this is not always so, and should the cause of trouble be a benign pedunculated growth, instead of an infiltrating carcinoma, we have the means of not only definitely ascertaining this, but of removing it by an operation that is without danger to the patient's life. While these points are sufficient of themselves to warrant the position of *œsophagoscopy* and *bronchoscopy* in medical practice, they are secondary when compared to the services they can render in the cases of foreign bodies in the air or food tracts. We are, indeed, called upon to treat few conditions that can give rise to greater anxiety, or may be attended by sadder consequences, than the entrance of a foreign body into the air-passages or gullet. Much will depend on the character of the foreign body, and on the position in which it gets lodged; but whether it be impacted in the air tract or food tract, or whether its presence gives rise to marked or negligible symptoms, such an accident should under no circumstances be treated lightly. It is true that when the air-passages give lodgment to the foreign substance the danger of suffocation from spasm, or obstruction, calls more frequently for urgency than when the gullet is the seat; but it should never be forgotten that a substance impacted in the gullet, though perhaps causing but slight local discomfort, if not removed, may ultimately prove fatal. In many instances it may be coughed up, or, if within easy reach, removed with forceps, probang, or coincatcher; but such favourable terminations cannot be reckoned on, and most of us are able to recall the feeling of helplessness experienced when a foreign body was found impacted at a point that precluded surgical interference. Any method that enables us to explore these hitherto inaccessible tracts, and overcome the difficulties of such a position, is well worthy of our consideration, and I wish to emphasise the gravity of such accidents, and to outline the advances that have been made in order to cope with them successfully. It is under circumstances such as I have just indicated, as the last resource perhaps, that we have *œsophagoscopy* to fall back on, and while the field for

its use is necessarily restricted, within this sphere it is of great practical utility.

On looking at the literature of the subject, it is hard to realise the difficulties experienced in developing the simple appliances before us, or to believe that the first practical idea in regard to œsophagoscopy went forth to the profession one hundred years ago. But so it is, for to Bozzini, a practitioner in Frankfort on the Main, belongs the credit of being the first to enunciate sound views in this direction. In his book, *Der Lichtleiter*, published in 1807, he predicted a great future for his endoscope, but, like many other pioneers, was in advance of his time, and it was either neglected or never taken up. For long after this the rapid advances in other fields claimed all the energies of the general surgeon, and it was not until the discovery of the laryngoscope by Garcia, in 1854, that methods for examining and treating the hidden cavities of the body received the attention they deserved. Hitherto, in dealing with these situations, we had to depend for our diagnosis chiefly on the symptoms of the patient or palpation of the parts. But a desire was long felt for more reliable methods, and as the fruits of this we have at the present time rhinoscopy, retinoscopy, laryngoscopy, cystoscopy, œsophagoscopy, bronchoscopy, and rectoscopy, none of which, I venture to say, we would care to be without.

#### DEMONSTRATION.

*Instruments.*—The instruments that I now show you are those according to Professor Killian, of Freiburg, and they may be regarded as embodying the latest developments. The œsophagoscope consists essentially of a source of light, furnished in this instance by a Kirstein's electric headlamp, and a series of straight, rigid, metal tubes, for inserting into the gullet, of different lengths and calibres, which vary for use according to the seat of the lesion and the age of the patient. To these may be added certain accessories, such as a bougie for introducing the tube, a pump for removing secretion, spongeholders, foreign body extractors, &c. The shorter the tube, the easier it is to introduce, and we are the better able to see through it, hence, we should use one only sufficiently long to reach and explore the seat of mischief. As these tubes serve to distend the collapsed wall of the gullet, at the same time as they conduct the rays of light for examining its interior, certain points about their construction must be executed with care—(a) the handle, or grip, should

be firmly attached to the tube; (b) the interior should be rough ground to obviate light reflexes, and quite straight; (c) the distal end of the tube should have its edges carefully turned and smooth, in order not to injure the lining membrane of the œsophagus when being pushed down; (d) the external surface should be as smooth as possible, and provided with a scale in centimetres or inches, beginning at the distal or lower end, so as to indicate the position or distance of the tube in the gullet. In this connection we have to bear in mind *three* important measurements which are taken from the edge of the upper incisors—to the cardiac end of the stomach, 40 cm. ( $15\frac{3}{4}$  inches); to the bifurcation of the trachea, 26 cm. ( $10\frac{1}{4}$  inches); to upper border of the cricoid cartilage, 15 cm. (or 6 inches). The œsophagus is normally constricted at these three points, the narrowest being that met with at the cricoid.

*Preliminaries.*—Before making a direct œsophageal examination, it is very important to carefully investigate the physical condition of the patient as well as the history of the case. Certain forms of heart disease, aneurysm, tracheal stenosis, bleeding from the stomach, &c., all either contraindicate œsophagoscopy, or call for the greatest care being exercised in carrying it out. In certain instances it may even be desirable to ascertain beforehand the position of the mischief by the passage of bougies. The stomach should be as empty as possible, and no food taken for at least five hours previously. The upper part of the body should be free, and only lightly clothed, the teeth should be examined, and artificial ones removed. As a rule, a general anæsthetic is only required in the case of children. With adults, local anæsthesia is usually sufficient, and for this purpose, under guidance of the laryngeal mirror, a 10 per cent solution of cocaine is painted over the posterior pharyngeal wall, epiglottis, opening of the larynx, and posterior cricoid region. It is in this last situation that the greatest difficulty is encountered, and it is well to pass the cocaine-saturated swab into the upper end of the œsophagus, and allow it to remain for a short time in that position.

*Position of patient.*—Œsophagoscopy may be undertaken in three different positions—

1. Sitting on a low stool, with the neck extended and head thrown back, and held in that position by an assistant, who stands behind the patient. Here the tube is best passed backwards, under the guidance of the index finger of the left hand, which is placed on the base of the tongue, so as to



pull the tongue and larynx forward. This position is unsuitable where there is a copious flow of saliva, as is usually the case when a stricture is present.

2. The recumbent position must be adopted when the examination is prolonged, or when a general anæsthetic is used. And here we can either use Mikulicz's lateral position, or that with the patient lying supine with his head over the end of the table and supported by an assistant. In choosing one or other of these positions, we should take advantage of the state of the teeth, and bear in mind that the gullet, after passing through the diaphragm, turns sharply to the left and forward, in which case the passage of an instrument into the stomach would be facilitated by having the patient lying on the right side. The legs should be slightly drawn up. The operator sits at the head of the patient, with the assistant on his left supporting the patient's head in the hollow of his hand when dependent, or with one hand on his brow and the other behind the neck when the position is lateral. Before passing the tube it is well to explain to the patient regarding the sensations likely to be experienced, and the freedom from danger associated with the procedure. Tell him that he cannot speak or swallow with effect, that secretion collecting in his mouth should be allowed to run out, that he should breathe quietly, and that if pain or great discomfort is experienced the tube will be withdrawn on his holding up a hand. The lamp should be tested beforehand by viewing a finger held up against the end of a tube.

*Passage of tube.*—It is best to pass the tube over a well-fitting, flexible bougie, after both have been warmed and lubricated with vaseline or paroleine, and the head placed in such a position as to form as near as possible a straight line from the run of the gullet to the upper incisor teeth. If the mischief is seated far down, 3 or 4 inches of the bougie may be allowed to project beyond the end of the tube, and holding both like a pen, and in such a way that they cannot move separately, they may be introduced directly without the intervention of a finger. Guided in this fashion by the bougie, the tube in many cases follows with ease. If the mischief be situated at the upper one-third of the œsophagus, the bougie should not project more than 1 inch in front of the tube, as it is always desirable to advance it to the seat of the lesion under guidance of the eye. It is often an advantage to approach by the left pyriform sinus. Here we pass the tube for 10 cm., and then ask the patient to swallow;

by this act it is usually carried down to 14 to 16 cm., *i.e.*, to the cricoid. At this point let the patient breathe quietly for a time; then again ask him to swallow, when without force it can be guided down past the constriction. Having once passed this, the narrowest part, the pilot bougie may be removed, the tube carefully pushed forward under guidance of the eye, and in this way the walls of the œsophagus are gradually brought into view and examined before being disturbed. The patient should be warned against moving his head of his own accord, and the operator should be careful about moving the tube from side to side, but rather guide it by moving the head of the patient. If mucous secretion or stomach contents be present in the tube, they must be washed out, pumped out, or mopped away. Having inspected the part, the tube should be removed, observing the parts carefully during its withdrawal. The inspection can be prolonged for a quarter to half an hour.

*Difficulties.*—The difficulties in passing the instrument are generally due either to spasm of the inferior constrictor, or to having the head thrown too far back. In the former case, steady pressure, kept up for a short period until relaxation ensues, is usually sufficient; but it should always be kept in mind that force must at no time be exercised.

Working on these lines, and with the exercise of care and patience, œsophagoscopy can be carried out in the majority of patients. The advantages to be derived from its use are obvious. It can be of great service in enabling us to establish a diagnosis by the removal of a portion from doubtful growths for microscopic examination. In the distressing cases of dysphagia sometimes met with about the change of life in women, it provides us with a means of ascertaining whether the condition is purely functional or due to malignant disease. Should a stricture of the gullet be present, we can find out its nature and treat it accordingly. In the case of impacted foreign bodies, it is especially useful by enabling us in many cases to effect their removal without recourse to the comparatively dangerous operation of œsophagotomy; and here it ought to be employed early, and if possible, before any other instrument had been passed. It should always be used in doubtful cases, as, for example, when a piece of bone is supposed to have been swallowed, with no other symptom resulting than slight pain in the act of deglutition. Here we are apt to take it for granted that the bone has found its way into the stomach, when it is actually embedded in the œsophageal wall. Under such circumstances the passage of a bougie or probang is no guarantee that the

gullet is free, for the pain felt may result either from a laceration of the tissues or presence of the object. The fact that this small piece of bone, if left undisturbed, may set up processes that can result in the death of the individual, is argument sufficient in favour of its early discovery and removal.

I have found *Œsophagoscopie*, by Professor Starck, of Heidelberg, a convenient and reliable guide in such work.

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### REPORT OF A CASE OF CEREBRAL ABSCESS: RUPTURE INTO THE LATERAL VENTRICLE: *POST-MORTEM*.<sup>1</sup>

By ALBERT A. GRAY, M.D., F.R.S.E.,  
Aural Surgeon to the Victoria Infirmary, Glasgow.

THE case of cerebral abscess reported below is interesting on account of the unusual course which it ran, and the peculiar conditions found at the *post-mortem*. For the following notes I am largely indebted to my house surgeon, Dr. Douglas:—

A. P., æt. 7, was admitted to the Victoria Infirmary under my care on 14th June, 1907, as a case of otitis media with acute cerebral complications.

*History*.—The right ear has been the seat of a chronic discharge since shortly after birth, and she has always been deaf in this ear as compared with the left. The discharge has always been very slight, and she never complained of pain until the onset of the present illness. No discharge has ever been noticed from the left ear. Three weeks ago the child caught a cold, and soon began to complain of pain in the right ear and across the brow; at the same time the discharge became a little more profuse. This went on until three days ago, when the discharge completely stopped, and the pain in the ear and frontal headache became worse. Yesterday (13th June) the face was noticed to be twisted to the right side, and the patient was unable to open the right eye. This has continued since. There is no history of rigor, of vomiting, of twitching, or convulsions.

*Family history*.—The father died of consumption. Mother and four other children are alive and well.

<sup>1</sup> Read at a meeting of the Glasgow Medico-Chirurgical Society held on 31st January, 1908.

*Previous health.*—Unimportant from the present point of view. Patient has not had scarlet fever.

*Examination.*—The child lies in an almost comatose condition, and is apparently moribund. She does, however, cry out in a querulous manner when roused, but does not understand anything said to her. The tongue is dry and covered with a brownish fur. The temperature on admission was 101°, the pulse-rate was 76 per minute, and of small volume, but regular. Respirations numbered 36 per minute. The right external auditory meatus is the seat of a chronic eczematous condition, but little or no pus is seen. There is no nodules, swelling, or apparent tenderness over the mastoid region nor over the region of the jugular vein.

*Face.*—There is well-marked facial paralysis on the left side, which, however, does not include the orbicularis palpebrarum.

*Eyes.*—There is ptosis of the right eyelid, associated with external strabismus, and dilation of the pupil. Thus, the right third nerve is paralysed. On the left side slight horizontal nystagmus is present, and the pupil is somewhat contracted, but dilates on stimulating the patient by pinching or shaking. Fundus not examined at this period.

*Reflexes.*—No difference can be found between the tendon reflexes on each side. Kernig's sign is absent.

*Muscles.*—No twitchings, and no retraction of the head nor rigidity of the muscles of the neck. The patient can move all the limbs, but the right arm and leg are moved decidedly more easily than the left, and the latter do not give much resistance to manipulation. Sensation and special senses cannot, of course, be examined.

In the heart, lungs, and abdominal organs nothing abnormal is found. The urine is dark and muddy; it is acid in reaction, and has a specific gravity of 1012. There is a copious deposit of urates, but no albumen, pus, sugar, or blood.

An hour or two after admission the pulse had fallen to 70 per second, the temperature to 97°, and the respirations to 28. Furthermore, the patient was even more deeply comatose than at last note. Operation was decided upon as soon as the patient was seen by Dr. Gray, and was performed forthwith.

*Operation* (7.15 p.m., by Dr. Gray).—No anæsthetic was perhaps necessary, but a little ether was administered as a precaution against movement on the patient's part, and also as a stimulant. The ears were examined by Dr. Gray, and it was then found that in addition to the conditions present in the right ear pus was also found in the left ear. It, therefore,

became a matter of doubt as to which side was responsible for the facial paralysis. But, taking the history of the case and all the other signs into account, it was considered most probable that the symptoms and signs were produced by a lesion on the right side, and the subsequent findings justified this view.

The usual curved incision was made behind the right ear, and the mastoid antrum was opened. The cavity was lined with granulation tissue, but there was little pus present, and no opening was found into the cranial cavity. The lateral sinus was exposed and, its walls being healthy, it was left unopened. The dura mater was then exposed over the roof of the antrum, and no extra-dural collection of pus was found. The dura mater was then incised, and it was observed that there was no pulsation of the brain. A tenotomy knife was, therefore, passed vertically upward for a distance of only 2 to 3 millimetres, and at once a profuse discharge of extremely foul-smelling fluid was evacuated. The fluid was opaque, but watery in consistency, and quite unlike the thick, creamy pus found in ordinary cerebral abscess; it obviously consisted of pus mixed with cerebro-spinal fluid. The pressure was very great, and the fluid ran out with considerable force. The abscess had, therefore, already ruptured into the lateral ventricle, an opinion expressed at the time, and subsequently found correct. It was clear also that the case was hopeless. A short drain of iodoform gauze was inserted and the wound dressed. The operation lasted an hour and a quarter. After operation the pulse-rate rose to 146, and the temperature to 100°.

*15th June.*—The patient has had a quiet night, and there was no vomiting. She has been drowsy all day, but when roused was able to respond intelligently to questions. The facial paralysis is less marked. Temperature, 99°; pulse, 117; respirations, 28.

*16th June.*—A little further improvement. Patient responds quite readily, and puts out the tongue when asked. The facial paralysis is less marked; the ptosis is passing off. The patient is, however, very irritable, and on an attempt being made to examine the fundus by Dr. Walker, she is so restless that it cannot be done satisfactorily. The wound was dressed, and the drainage not appearing to be satisfactory, a rubber tube was inserted instead of the gauze one. Temperature, 99·5°; pulse, 98; respirations, 27.

*17th June.*—The condition is about the same as yesterday.

*18th June.*—The mind is still quite clear, and the patient

responds readily to questions, &c. The temperature and pulse still remain up, and there is a little evidence of stiffness of the neck.

*19th June.*—The wound was again dressed, and appears to be quite healthy. The facial paresis is less marked, as are also the ptosis and strabismus. The patient is not drowsy, and speaks quite intelligently. She is, however, very irritable. Temperature, 102°; pulse, 108; respirations, 26.

*20th June.*—About the same as yesterday. Temperature, 103°; pulse, 124; respirations, 32.

*21st June.*—Towards evening to-day the patient has complained of pain in the back.

*22nd June.*—Pain in back still complained of. Wound dressed, and looking quite healthy. Temperature, 101°; pulse, 102; respirations, 30.

*23rd June.*—The patient is rather apathetic to-day, and has refused nourishment.

*24th June.*—Pain in back still complained of. It was noticed to-day that twitching of the hands and legs occurred.

*25th June.*—The signs of meningitis are more clearly marked to-day. There is retraction of the head, nystagmus, twitching of arms and legs, increased reflexes, Kernig's sign, and vomiting.

*26th June.*—Wound dressed and looking healthy. The condition of the patient is rather worse than yesterday.

*27th June.*—Patient died to-day, with all the signs of meningitis.

*Post-mortem examination by Dr. Anderson (28th June, 1907).*—A. P., æt. 7, under Dr. Gray. Permission was obtained to examine the head only.

The body was that of a well-developed child; somewhat emaciated; rigor mortis was pronounced; the pupils were equal and medium in size.

*Head.*—There was a curved incision behind the right ear, and the radical mastoid operation has been performed. The drain was removed, and an opening through the roof of the antrum was found, through which an abscess in the brain was drained.

The scalp was reflected, and found healthy, and the calvarium was also normal in appearance. The dura mater was deeply congested and adherent to the bone at seat of operation, while on its inner aspect there was also adhesion to the pia arachnoid. There was no evidence of sinus thrombosis. The subdural space contained a slight excess of fluid,

somewhat turbid in character from the presence of flakes of purulent exudate. It was shut off at the place of abscess by the adhesion of the dura mater to the surface of the brain.

The vessels in the sulci were deeply congested, and there was slight flattening of the convolutions. A purulent basal meningitis was present, extending from the optic commissure backwards over the quadrilateral space, which was filled up by same over the entire inferior surface of pons, medulla, and median part of the lateral lobes of the cerebellum, with an indipping of the exudate between the lobes.

The exudate was of a thick, dense character, and the cranial nerves of the affected area were surrounded by same. The abscess was situated about the middle of the right temporo-sphenoidal lobe, well drained and collapsed, with well-defined wall and hæmorrhagic area in its periphery, communicating with the lateral ventricle at its posterior upper aspect.

On dissection of the brain, a considerable quantity of thick, greenish pus was found in both lateral ventricles, which were somewhat dilated, and pus was also present in the third and fourth ventricles, the process having extended to the latter through the aqueduct of Sylvius.

Examination of the right temporal bone showed the presence of pus and granulation tissue in the middle ear. There was a minute area of carious bone in the upper posterior and internal wall of the antrum, and through this area a probe could be pushed into the cranial cavity, this being the region through which the infection had passed to the interior of the cranium. The meninges around the perforation were healthy, but were, of course, adherent, the adhesions thus preventing infection of the intradural space. A healthy perforation of the bone over the lateral sinus was present, this being made when the sinus was exposed during the operation. There was a perforation of the roof of the tegmen tympani, extending backwards to the roof of the antrum, but not reaching so far back as the carious area in the latter described above. The wound was healthy, and the dura mater and arachnoid were adherent over it, shutting it out from the arachnoid space.

*Remarks.*—The case presents many points of interest. The usual signs of cerebral abscess, such as various paralyses, were present, and need not be remarked upon further.

The chief interest lies in the rupture into the lateral ventricle, which probably occurred at the time when the

headache became noticeably worse and the doctor was for the first time called in—that is to say, on the morning of the day of operation. It was after this that the consciousness became affected, and by the time she was admitted to hospital the patient was semicomatose, this symptom in itself being strongly suggestive of that condition, and the other signs corroborated this view. Vomiting and shivering, however, although frequently present in cases of rupture into the lateral ventricle, were absent in this case.

The most interesting feature, from a clinical point of view, is the remarkable way in which the patient improved after the operation; for rupture into the lateral ventricle is rapidly fatal, so far as is known. So much was this the case that at one time I was afraid an error in diagnosis had been made, though the profuse flow of cerebro-spinal fluid from the abscess cavity seemed to exclude the possibility of such an error. The inevitable purulent meningitis set in, however, bringing with it the fatal result. The temporary improvement was, no doubt, due to the relief of pressure. The reason why death did not occur earlier was probably due to the fact that the rupture of the abscess had not occurred suddenly, but was of the nature of a gradual leaking through into the ventricle.

The sequence of events was very interesting from the pathological point of view, for the operation by prolonging life enabled the infection to pass from the right lateral ventricle through the foramen of Monro to the third ventricle. From the latter the infection passed through the foramen of Monro to the left lateral ventricle, and also, through the aqueduct of Sylvius, to the fourth ventricle, from which it escaped by the foramen of Magendie into the arachnoid space. From this point it set up a purulent meningitis, involving almost all the cranial nerves and entailing a fatal result.

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## CORRESPONDENCE.

MR. J. R. CURRIE requests us to insert the following correction of his paper on "The Serum Disease," which appeared in our issue for April:—

*Dr. R. Thorne Thorne's case* (p. 287).—Dr. Thorne's first injection was that given in 1902. Thus the final injection was not in the nineteenth year from the first injection: the interval was approximately five years.

## Obituary.

DAVID M'COWAN, LL.D.

THOUGH Mr. David M'Cowan was not a member of the medical profession, it is peculiarly fitting that in these pages a tribute of respect should be paid to his memory. For not only was he one of the most highly respected citizens of Glasgow, but for many years he was so closely associated with the management of the Royal Infirmary, the largest and oldest charity of the kind in the city, that considerations affecting the hospital and its staff must have taken up a large proportion of his time and other talents. As honorary treasurer of the infirmary for more than twenty years, Mr. M'Cowan was a tower of strength to the institution; for his integrity of purpose, his public spirit, his generosity, and his great business ability were so well known, that any organisation with which he was prominently associated might safely reckon on a great measure of public confidence and support.

Mr. M'Cowan was in his eighty-third year when he died on 26th April last. He had not been robust for some years past, but was able to be present at the last meeting of the qualified contributors to the infirmary at the end of January. His death will be felt as a great loss by numerous organisations connected with religion, philanthropy, and business.

CURRENT TOPICS.

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APPOINTMENTS TO THE GLASGOW MATERNITY HOSPITAL.—On account of the greatly increased size of the hospital, it has been necessary to augment the visiting medical staff. The following have been appointed:—(1) *Visiting Physicians*—Professor Murdoch Cameron, Drs. R. Jardine, Munro Kerr, and A. W. Russell; (2) *Assistant Physicians*—Drs. P. M'Bryde, G. N. Turner, J. L. Carstairs, and D. Shannon.

GLASGOW ROYAL ASYLUM: NINETY-FOURTH ANNUAL REPORT.—The report for the year 1907 is another record of excellent work carried on at this fine institution. At the annual general meeting of the qualified contributors, the chairman, Mr. Francis Henderson, remarked that when the first Royal Asylum in Glasgow was erected in 1810 in Parliamentary Road, it was considered to be so far out of town as to be entirely unsuitable for Glasgow patients—a curious illustration of the growth of Glasgow during the last century.

The admissions for the year 1907 were 145; the discharges, 103; and the deaths, 29. The average number resident was 428, and the total number under care 563. The mean age on admission was 45·6 years for men, and 45·5 for women. The type of mental disorder was not so decidedly melancholic as in former years. States of delusional insanity, without marked depression or excitement, are becoming more common among the admissions. The percentage of deaths, calculated on the average number resident, was 6·8, as compared with 7·8 in 1906.

Of the 145 admissions, 48 were voluntary, as compared with 26 in 1906, and 31 in 1905. Dr. Oswald gives some details about this group of cases, with regard to which he remarks that their recovery-rate is higher than that of certified cases, while the duration of treatment is shorter, and only a small proportion require certification.

The *Gartnavel Gazette*, the *Journal of the Glasgow Royal Asylum*, is worthy of notice, as containing not only news of the asylum, but also other matter of a literary character, both instructive and humorous.

## NEW PREPARATIONS, &amp;c.

**TABLOID QUININE COMPOUND** (Burroughs Wellcome & Co., London) is composed as follows:—Cinchonæ alkaloidorum, gr. 1; acetanilidi, gr.  $1\frac{1}{2}$ ; camph. monobrom., gr.  $\frac{1}{2}$ ; pulv. ipecac., gr.  $\frac{1}{8}$ ; ext. casc. sagr., gr.  $\frac{1}{4}$ .

**NOVASPIRIN** (Bayer Co., Ltd., 19 St. Dunstan's Hill, London, E.C.) is a white, odourless, and nearly tasteless powder, which passes through the stomach unchanged, and decomposes in the intestine into salicylic acid (of which it contains 62 per cent) and methylenecitric acid. The dose for an adult is 15 or more grains several times a day.

**MARIENBAD TABLETS** (C. W. Barenthin, Berlin, W., Wilhelmstrasse 55).—These tablets, or tablet-shaped pills, are well known for their laxative properties. It should not be inferred from their name that they consist simply or even mainly of saline ingredients.

**SEPTOFORMA** (Union, Limited, 1 North St. Andrew St., Edinburgh) is a new antiseptic, disinfectant, and deodorant. It is said to be non-poisonous, and to be non-injurious to the skin or to surgical instruments. It is produced by condensing formaldehyde with *p*-naphthol and other bodies of the phenol group, and dissolving in alcoholic linseed oil soap. Septoforma is a liquid of a brownish colour, smelling of formalin, and causing a certain amount of lathering in water. It is used in a solution of a strength varying from 1 to 3 per cent. It may be employed internally in the strength of  $\frac{1}{2}$  per cent.

**SEPTOFORMA SOAP** contains 15 per cent of septoforma. It is sold in cakes, price sixpence each.

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## MEETINGS OF SOCIETIES.

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### GLASGOW MEDICO-CHIRURGICAL SOCIETY.

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SESSION 1907-1908.

MEETING IX (*continued*).—7TH FEBRUARY, 1908.

DEMONSTRATION IN THE GLASGOW ROYAL INFIRMARY  
BY MEMBERS OF THE STAFF.

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*The President, DR. WALKER DOWNIE, in the Chair.*

#### XV.—CASES ILLUSTRATING VARIOUS DISEASES OF THE EYE.

BY DR. A. MAITLAND RAMSAY.

CASE 1. The first case, that of M. D., a schoolgirl, 12 years of age, was shown as a proof that the ophthalmo-reaction (Calmette) must be used with caution and discrimination. The patient was, on 8th October, 1907, admitted to the Ophthalmic Institution suffering from superficial vascular ulceration of the right cornea. There was a history of a similar attack in the left eye two years before, and, though careful examination revealed no sign of tubercle in lungs or abdomen, both cervical and submaxillary glands were much enlarged. On 10th October one drop of 1 per cent solution of tuberculin was instilled into the left eye, which was at that time perfectly free from inflammation, although there was a faint nebula on the cornea, the result of the previous attack of ulceration. Within twenty-four hours there was a violent muco-purulent reaction, the discharge being very abundant, and accompanied by marked swelling of the lids and thickening of the palpebral conjunctiva. The inflammation could not be influenced by treatment, and progressed till the cornea quickly became vascular and abraded over the central area.

On 20th October, 0.25 cubic centimetre of a 1 in 1,000 solution of Koch's old tuberculin was injected subcutaneously. This was followed by a rise in temperature, and resulted in great improvement in the condition of the right eye, though the left remained unchanged. Subsequently the old tuberculin was again injected twice, the first time to the amount of 0.25 cubic centimetre, and the second time to the amount of

0.5 cubic centimetre, and, by the end of November, the right eye was almost quite recovered, while in the left the discharge had begun to lessen. After that date the improvement in the latter was steady, but there remains, as a result of the Calmette instillation, a considerable opacity of the centre of the cornea, and in consequence the vision is seriously impaired.

CASE 2. The second case, that of a schoolgirl, P. C., 8 years of age, was shown to illustrate the value of the conjunctival flap in the treatment of gaping wounds of the cornea. The child had been struck on the left eye by a piece of coal, and the cornea had been cut obliquely in its whole extent from above downwards, so that there was a wide gaping wound, with a large prolapse of iris. The globe was disinfected, and the bruised portion of the iris carefully excised; and thereafter the conjunctiva was cut all round the cornea, a purse-string suture introduced, a collargol disc placed over the corneal wound, the suture drawn tight, and the cornea completely covered. There was no inflammatory reaction; and in six days the suture gave way, and the conjunctiva slipped back into its place, leaving the wound of the cornea healed.

On 7th February, 1908, there was a faint linear scar marking the site of the wound, but the media were quite transparent, and the fundus normal. The vision is slightly impaired, but the patient is too backward to be able to state accurately to what extent.

CASE 3. The third case, that of a vanman, J. P., 23 years of age, was one in which the suppuration of an infected wound seemed to be arrested by the use of antitoxin (anti-diphtheritic). The patient was admitted to the Ophthalmic Institution about six hours after he had been struck on the left eyeball by a piece of wood. The cornea was cut transversely in its whole breadth, the iris was prolapsed, and the lens was cataractous; while there was blood in the anterior chamber, and vision was reduced to a perception of light. On the day after the accident there were signs of infection, and twenty-four hours later a purulent exudation occupied the lips of the wound, and extended into the anterior chamber, which was one-third full of pus. The iris was discoloured, the cataractous lens was distinctly yellow, there was great pain, and so plain, indeed, were all the signs of incipient panophthalmitis that the condition was wellnigh

hopeless. The man was put under chloroform, the wound reopened, the edges cleansed from slough, and the lens washed out with saline solution. At the same time, a few drops of 25 per cent argyrol were injected into the eye, and 2,000 units of antitoxin given subcutaneously. Next day, as the pain had disappeared, and the eye was no worse, other 2,000 units of antitoxin were injected; and on the third day it was quite evident that the suppurative process had been arrested, and the wound in the cornea was closed. A third injection of 2,000 units of antitoxin was afterwards given, and since then there has been steady improvement. Light projection is good, and by and by I propose to form an artificial pupil. Vision in the right eye is normal.

The rapid diminution of pain after the injection of the serum—here one of the most striking features of the case—has occurred in every case in which I have used antitoxin, whether suppuration was arrested or not. The inflammatory organism in this case was a staphylococcus.

**CASE 4.** The fourth case, that of an ironworker, J. L., 14 years of age, illustrated the result of the removal of a piece of metal from the posterior chamber by means of a large electro-magnet. The lad had, about three hours before his admission to the Ophthalmic Institution, been struck on the right eye by a chip of metal from a rivet. There was a penetrating wound in the upper lid, and a corresponding one in the sclerotic, the intra-ocular tension was diminished, the pupil semidilated, and the anterior chamber deep. There was no pain, and the patient did not believe that a chip had entered his eye. When, however, the pole of the large magnet was brought near the centre of the cornea, pain was at once felt, and a particle of metal was seen to bulge the iris forward, and to enter the anterior chamber, from which it was readily extracted. The wound in the sclerotic was covered by a flap of conjunctiva, and healed without interruption, the boy being discharged from the hospital on the sixteenth day after the accident.

On 7th February, 1908, vision was  $\frac{6}{6}$ . The only sign that the eye has been injured is that the pupil is slightly oval, and, when it is dilated by atropine, posterior synechiæ can be seen at the lower and outer aspect.

**CASE 5.** The fifth case, that of a married woman, Mrs. M., 33 years of age, was shown to illustrate the rapid improvement in specific iritis which took place after treatment by

subcutaneous iodipin injections. The patient came to the Ophthalmic Institution on 13th June, 1907, complaining of pain and dimness of vision in the left eye. The attack had lasted for four weeks, and had commenced three weeks after the birth of a child. There were all the usual signs of irido-cyclitis, and, in addition, there was present, on the lower and outer quadrant of the iris, a well-marked, reddish yellow gumma, about the size of a millet-seed. Atropine was applied locally, and one drachm of 25 per cent iodipin was, once a week, injected between the shoulder blades. After the fourth injection the acute symptoms began to disappear, and satisfactory improvement has, ever since, been maintained without interruption.

CASE 6. The sixth case, that of a labourer, P. M., 26 years of age, illustrated the successful extraction of both lenses in a case of diabetic cataract. The recovery of sight has been perfect in both eyes; and the chief point of interest has been the smooth and rapid healing of the operation wounds, in spite of the fact that the patient suffers from advanced diabetes.

CASE 7. The seventh case, that of a boy, J. D., 4½ years of age, illustrated molluscum contagiosum, which had lasted for about a year. A section of a tumour removed from the right upper eyelid demonstrates the typical appearances of the disease.

I am indebted to Dr. Mary Hannay for the microscopic preparation.

Dr. Maitland Ramsay exhibited a series of pathological specimens mounted by Dr. Mary Hannay, to illustrate—(1) Ocular tuberculosis; (2) epibulbar sarcoma of eyeball; (3) sarcoma of choroid; (4) glioma of retina.

XVI.—DR. KERR LOVE showed the following:—

1. Cases of double mastoidectomy—(a) A case in which the radical operation has been done on both sides; (b) a case in which Mr. Heath's operation has been done on both sides; (c) a case in which the radical operation has been done on one side and Mr. Heath's operation on the other.

2. Cases showing the Schwartz's, or partial, operation.

3. A group of three children, semi-deaf and semi-mute.

These are examples of a class of children whose existence makes the creation of a new type of school necessary.

XVII.—DR. ROWAN showed several cases illustrating different forms of diseases of the cornea, more especially interstitial keratitis, of which some were acute and recent, others were gradually recovering, and showed the typical "ground glass" appearance, from this shading off into different degrees of opacity, till there was no opacity visible to the naked eye, but, in all of them, if examined with a sufficiently strong lens, evidences of the past condition will always be found. These patients also illustrated other characteristics of inherited syphilis, as teeth, &c.

He also showed a case of "birth injury," there being opacities in the cornea; also a case where he had extracted a piece of metal from the interior of the eye, after it had been there three days. The metal was located by means of the x-rays, and extracted by the magnets. It had passed through the cornea and lens, so was first brought into the anterior chamber by the large magnet, when an incision was made in the cornea, and the metal removed by means of the small magnet. After the cataract was extracted, the child had a useful eye, and one in which no scar or disfigurement was noted unless carefully examined.

XVIII.—DR. H. WRIGHT THOMSON showed four cases, in which the lachrymal sac had been removed.

CASE 1. J. K., female, æt. 26. Chronic dacryocystitis of eight years' duration, with occasional swelling of the sac, which on pressure emptied itself of purulent fluid into the conjunctival sac.

On 1st February, 1908, the right sac was extirpated. On cutting the duct, pus escaped into the wound, but healing occurred by first intention.

CASE 2. Mrs. E., æt. 62. Chronic dacryocystitis on the left side, of three years' duration, treated for some months by probing and syringing, after slitting of the lower canaliculus. Little improvement resulted, and the sac was removed in April, 1907, since when the eye has remained free of irritation, and waters very slightly when exposed to wind.

CASE 3. Mrs. C., æt. 34. Double chronic dacryocystitis. Both sacs extirpated. Freedom from all symptoms, except slight watering when exposed to wind.

CASE 4. J. S., male, æt. 28. Dacryocystitis, the result of an injury to the nose (fracture of nasal bones, &c.) seven years ago. Admitted to hospital with acute dacryocystitis, the second attack since his injury. Between these attacks he had constant irritation of the eye and purulent discharge.



The acute symptoms subsided under treatment, and ten days after admission the right lachrymal sac was excised. Healing was uneventful, and his eye has since been free of irritation, watering only when he stoops or is exposed to wind.

In all four cases the patients were able to be dismissed from hospital on the fourth day after operation.

XIX.—DR. MORTON showed—(1) A case of *tinea barbæ*; (2) a case of maculo-papular syphilide; (3) a case of tubercular (nodular) syphilide of face; (4) a case of psoriasis eczémateux; (5) aggregations of closely-set, enormous blackheads of upper eyelids and skin of inner canthi of eyes in a woman, the bridge of the nose being slightly affected also.

XX.—DR. ROBERT FULLERTON showed—

1. A woman, æt. 33, with a cyst in the floor of the left nasal passage. Her face exhibited a fulness below and external to the right ala nasi, which obliterated the nasolabial sulcus on that side. In front of, and below the anterior end of the right lower turbinal, a bluish-grey swelling was seen, about the size and shape of a half bean, with its long axis running from before backwards. By placing a finger in the incisive fossa against the gingiolabial fold, and pressing on the cyst from above, it could be felt distinctly, as if lying close below the mucous membrane. It was regarded as a simple retention cyst.

2. A man, æt. 41, who, on 28th September, 1907, had been operated on by Killian's method for empyema of the right frontal sinus. This case was complicated by a discharging sinus, which opened externally above the right eye about the middle of the orbit, and, passing inwards, communicated with the frontal cavity by an opening in its bony floor. The ethmoidal region on the same side was also to a large extent disorganised by polypoid growths.

The patient was well and about three weeks after the operation. Practically no deformity resulted from the operation, and all purulent discharge from the nose ceased.

3. Two cases to illustrate the results obtained by submucous resection of the deflected bony and cartilaginous portions of the septum nasi.

XXI.—DR. JAMES RIDDELL and DR. KATHERINE CHAPMAN showed fifteen patients. Several were cases of lupus vulgaris healed, and others in the process of healing. Two cases of

tubercular disease in bone which had got well. One case of keloid also healed. Two cases of exophthalmic goitre, both of which were greatly improved. In one of them the improvement had been maintained, and the treatment stopped for one year. The pulse had dropped from 109 per minute to 80. The exophthalmos was much less, and all symptoms had practically disappeared. Two cases of rodent ulcer, one healed and one almost well. All these had been treated by *x*-rays. In the cases of goitre, *x*-rays were used on account of their well-known power of causing degeneration of epithelial structures.

One case of rodent ulcer was shown illustrating the use of ionised zinc. The ulcer, which had been rather larger than a shilling, was completely healed. Three cases were shown illustrating the beneficial action of *x*-rays which sometimes is obtained in the more severe forms of malignant disease. One patient had a recurrence of cancer in the scar after removal of the breast. This case came under treatment in November, 1904. At that date there was an ulcer on the scar, about the position of the nipple, the size of a crown piece; pain and hemorrhage were prominent symptoms. There were six or seven small red nodules in the skin, scattered along the edge of the scar. In the axilla was a mass, but well defined, about the size of a pigeon's egg or less. In three months' time the ulcer had quite healed, the axillary mass had practically gone, and most of the nodules in the skin had disappeared; oedema in the arm, which had been a marked feature, was much less. Patient continued having occasional treatment, chiefly to the axilla, until early in 1906. Lately the mass in the axilla has begun to increase in size, and treatment is resumed. There has been absence of pain from almost the beginning of treatment.

The second was a case of epithelioma of the dorsum of the foot. A small tumour appeared in the summer of 1907. It gradually enlarged, and ultimately broke down, leaving an ulcerating mass the size of a florin. Treatment began in November, and by this date the ulcer is entirely healed, and no sign of the tumour. The diagnosis was confirmed by the microscope.

The third case was one of round-celled sarcoma of nasopharynx. Here, too, the diagnosis was confirmed by the microscope. Towards the close of 1903 the patient began to have a discharge of the nose. In a few months the nose became blocked, and blood was occasionally present with the discharge. Headaches, sleeplessness, and progressive loss of weight were prominent symptoms. Treatment began on

7th June, 1904. By January, 1905, the tumour had disappeared entirely; 60 applications had been made, and the patient had put on 2 st. weight. To-day no sign of the tumour is seen, and the patient feels quite well.

Among others, the following appliances were shown:—Those for producing temporary complete epilation by one measured dose of *x*-rays (for treating ringworm, &c.), for ionisation, for exact localisation, a stereoscope for radiograms, &c., and radiograms illustrating fractures, dislocations, early tubercular disease in bones and lungs, abscess of bone, cancer of bone, the examination of the bowels after a bismuth, renal urinary calculi, &c.

XXII.—DR. WORKMAN showed the following preparations:—(1) Cancer of the œsophagus opening into the left bronchus—microslides of the same; (2) cancer of œsophagus involving the trachea and bronchi—microslides of the same; (3) curious multiple Meckel's diverticulum; (4) ectrophy of the urinary bladder (operated on by Mr. H. Rutherford)—transplantation of a piece of the bladder wall, with the openings of the ureters, into the sigmoid flexure; (5) ectrophy of the urinary bladder (operated on by Mr. J. H. Pringle)—transplantation of the openings of the ureters into the rectum; (6) hydatid cyst, with daughter cysts, in the liver, preserved for several years by the formaline and glycerine method; (7) sections of liver from a case of emphysema of the organ due to the growth in it of *bacillus aerogenes capsulatus*; (8) right occipital lobe of the brain showing large tubercular mass, preserved in glycerine for nine years after preparation by the formaline method; (9) section of brain showing hæmorrhage into the cortex, preserved for nine years by the formaline and glycerine method; (10) acute parenchymatous nephritis, with hæmorrhage into the pelves and calices, preserved by formaline and glycerine method for nine years (since September, 1898); (11) section of cerebellum, pons, and medulla, showing an embolic softening in the pons; (12) hydrocephalus in a child of 3 months—the lateral ventricles have been filled with a jelly to show the distension; (12) section of brain showing a tumour in the right occipital lobe, apparently a myeloid sarcoma; (13) stomach from a case of carbolic acid poisoning, preserved by formaline and mounted in jelly; (14) embolic necrosis of the kidneys, with embolism of lower end of the aorta; (15) a series of microscopic preparations; (16) a series of lantern slides illustrative of diseases of the spinal cord and brain.

XXIII.—DR. BALFOUR MARSHALL showed a series of specimens illustrating the following varieties of ectopic gestation:—(1) Ruptured tube, with escape of whole ovum; (2) ruptured tube, with opening plugged by villi of ovum; (3) tubal mole; (4) incomplete tubal abortion; (5) complete tubal abortion; (6) tubo-ovarian gestation; (7) ruptured tubo-peritoneal gestation associated with twin uterine pregnancy, uterus shown, and foetus from ruptured sac; also, specimens of double pyosalpinx, in which hysterectomy was done; also calcified fibromyoma, &c.

XIX.—DRS. DAVID M'CRODIE, J. ARCHIBALD CAMPBELL, and LIZZIE FRASER showed the following microscopic specimens:—(1) Phagocytosis (staphylococci); (2) phagocytosis (tubercle bacillus); (3) trypanosoma (Lewisi); (4) trypanosoma (Brucei); (5) typanosoma (Gambiense); (8) malaria parasites (tertian); (9) malaria parasites (quartan); (10) malaria parasites (æstivo-autumnal), two slides; (11) bacillus diphtheriæ from culture; (12) bacillus typhosus with flagella; (13) pneumococcus in cerebral abscess; (14) meningococcus in cerebro-spinal fluid; (15) bacillus anthracis in blood; (16) bacillus pestis in spleen; (17) coccus rheumaticus from blood; (18) bacillus lepræ in skin nodule; (19) filaria nocturna; (20) aspergilliosis; (21) ringworm (trichophyton ectothrix); (22) actinomycosis (liver); (23) actinomycosis (tongue); (24) favus.

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#### MEETING X.—14TH FEBRUARY, 1908.

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*The President, DR. WALKER DOWNIE, in the Chair.*

#### ON THE CAUSATION AND TREATMENT OF DIABETES.

BY DR. ARNOLD LORAND, CARLSBAD.

*Dr. James W. Allan*, in introducing Dr. Lorand, said—It is my pleasing duty to introduce to this Society Dr. Arnold Lorand, of Carlsbad, a gentleman who has devoted much time and attention to the study of the vascular blood glands, and who has written extensively on that very difficult and important subject; and I am confident that the communication

which he is prepared to lay before us this evening will prove to be of great interest, and will give rise to a profitable discussion. Perhaps I may be permitted, very briefly, to explain how it comes about that I am called upon to introduce Dr. Lorand. In the year 1903, being deeply impressed with the idea that transplantation of the pancreas might be the means of cure, or relief, in diabetes, as transplantation of thyroid had proved to be in myxœdema, I wrote a letter to the *British Medical Journal*, entitled "Transplantation of Pancreas in Diabetes and of Suprarenal Gland in Addison's Disease." It was published in the number for 28th February, 1903. A case of grave diabetes, which came under my care in the Glasgow Royal Infirmary, was operated on by my surgical colleague, Dr. Barlow, who transplanted the pancreas of a cat. The operation was performed with care and skill; the patient died. (For details, see *British Medical Journal*, 21st and 28th March, 1903.) Next year I sent a communication to the *Lancet* on the subject, which was published in the number for 14th May, 1904. This contains my full argument regarding the relation of the pancreas to diabetes, and it brought me in contact with Dr. Lorand, who, having seen the paper, communicated with me, and, as the result of our correspondence and the information contained in his publications which he kindly sent me, it was clear that, while he supported my argument, he had at the same time a wider and more comprehensive view of the relationships and counteractions of the blood glands. He also sent a very interesting letter to the *Lancet* (published 25th June, 1904), explaining his views in a clear and telling manner. (I may here mention that Dr. Paterson of the Glasgow Royal Infirmary, at my request, performed transplantation of pancreas in another case of grave diabetes, and transplantation of suprarenal in a case presenting the features of Addison's disease. These operations were performed with great care and skill; both patients died.) It has seemed right to make this brief preliminary statement. I have thus furnished the connecting link between Dr. Lorand and Glasgow, and I am sure the Society will give him a very hearty welcome. I now leave it to our President to call upon Dr. Lorand to favour us with his lecture.

Dr. Lorand then delivered his lecture on the above subject, which is published as an original article in our issue for May, 1908, p. 321.

*Dr. Lorand*, in reply to various questions by Drs. Robertson, Cowan Lees, Rowan, Pollock, and Allan, said—The liver

serves as a storehouse for glycogen, which is given off on nervous stimulation of the splanchnics, and glycosuria results. Thus, in diabetes we frequently find hypertrophy of the liver. The pancreas is also closely associated with diabetes, and alterations in the liver are generally followed by those of the pancreas. The dividing line between glycosuria and diabetes is not always very definite. A test dinner, containing about 3 oz. of grape sugar, will settle the question. If after the meal the percentage of sugar has risen from, say, 0·3 per cent to 0·5 per cent the case may be pronounced as one of diabetes. Diabetes is not contagious. The frequent occurrence in both husband and wife is accounted for by their having both partaken of the same diet, containing an excess of meats and sweets, for a lengthened period. Albumen appears in practically all cases of long duration. Sugar may disappear in cases complicated by interstitial nephritis, and such cases are often quickly fatal. Retinitis and cataract may appear in mild cases, and may be absent from advanced cases. Improvement in the quantity of sugar is not always followed by improvement in the retinitis. I have no knowledge of the disappearance of lenticular cataract by the Carlsbad cure, and do not consider it likely to disappear in a diabetic without operation.

A vote of thanks, proposed by Sir William Macewen, was heartily responded to.

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#### MEETING XI.—21ST FEBRUARY, 1908.

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*The President, DR. WALKER DOWNIE, in the Chair.*

I.—DR. J. CRAWFORD RENTON showed—

1. Cases of excision of the elbow-joint for injury and disease, and photographs illustrating the different movements of the joint after operation. He referred to a case operated on seventeen years ago for tubercular disease, in which the patient has perfect movement in every direction. One of the cases shown had  $5\frac{1}{2}$  inches of bone removed, and the movements were good and improving every month.

2. Two ruptured spleens, giving notes of the cases. One, a lad of 22, died the day after operation; the other, a boy of 12, recovered.

3. Several vesical calculi, with *x*-ray photographs taken previous to operation.

4. Large calculus from the left ureter, weighing 4 oz., removed by Morris's operation.

5. Twelve calculi removed from the left kidney, the operation being done with the patient under spinal analgesia induced by stovaine.

6. Four ruptured and gangrenous appendices, preserved by the formalin method. This method preserves the same appearance as when the appendix is removed.

7. Dr. Renton read notes of four cases of intussusception—two in the cæcal region and two at the splenic flexure of the colon. Three cases recovered; the fourth, a patient who had had a baby six days previously, died suddenly with symptoms of thrombosis.

8. Also note on Mayo's method of gastroenterostomy, by which the first part of the jejunum is joined to the posterior wall of the stomach exactly at the spot where the stomach lies normally on the jejunum. Twelve cases were referred to in which vomiting gave no trouble.

## II.—UNUSUAL CASE OF MEDIASTINAL TUMOUR.

By DR. WM. MACLENNAN.

Dr. MacLennan's paper will appear as an original article in a future issue of the *Journal*.

*Dr. Walker Downie* saw the patient sixteen years ago. He distinctly remembered that the tumour was firm and encapsuled, and not a cyst as reported. Recently he had seen the case when she suffered from dyspnoea. There was no obstruction from the larynx.

*Dr. A. A. Young* thought fever was present only in large or advanced sarcomas.

*Dr. Arch. Young* thought fever usually pointed to a complication.

*Dr. Wm. MacLennan* said that secondary infection was usually present, but that many quite localised tumours were associated with fever. A slight degree of fever was a very important point in the differential diagnosis between cancer and ulcer of the stomach. It indicated the presence of toxins.

III.—CASE OF INTRACYSTIC PAPILLOMA OF AN ACCESSORY  
THYROID.

BY DR. ALEX. MACLENNAN AND DR. J. SHAW DUNN.

Drs. MacLennan and Dunn's communication will appear as an original article in a future issue of the *Journal*.

IV.—DR. ALEX. MACLENNAN also gave a lantern demonstration on the functions of the thymus gland, with special reference to the changes in the bones, &c., produced by thymusectomy.

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MEETING XII.—6TH MARCH, 1908.

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*The President, DR. WALKER DOWNIE, in the Chair.*

THE CEREBRAL AND OCULAR COMPLICATIONS OF ANÆMIA AND  
THE PROBABLE RELATIONSHIP OF THESE TO THROMBOSIS.

BY DR. C. O. HAWTHORNE.

Dr. Hawthorne's paper is published in the *Polyclinic Journal*.

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MEETING XIII.—13TH MARCH, 1908.

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*The President, DR. WALKER DOWNIE, in the Chair.*

I.—CASE OF TELANGIECTASIS OF THE RETINAL CAPILLARIES  
AND VENOUS RADICLES.

BY DR. W. B. INGLIS POLLOCK.

[ABSTRACT.]

In the right eye there was a marked sclerosed condition of the branches of the superior retinal vein, and groups of convoluted vessels. Four telangiectases were also seen. They



had undergone no alteration during the past six months, and, on careful focussing the outline of small vessels could be made out.

[*See Transactions of the Ophthalmological Society*, vol. xxvii.]

## II.—CASE OF AURAL TUBERCULOSIS.

BY DR. J. KERR LOVE.

A. B. was born on 26th May, 1906. About the middle of July a gland on the left side of the neck was seen to be swollen. The child was sent to the coast for the month of August, and by the end of that month a bad odour was discovered from the ear. On the return of the child from the coast, at the beginning of September, the cervical gland was discovered by the family doctor to have suppurated, and the abscess was opened early in September.

I saw the child about the middle of December, a week after the facial nerve of the same side had become paralysed. The discharge from the ear was abundant and offensive, and immediate mastoidectomy was resolved upon. On 17th December, at the operation, the entire mastoid process was found filled with broken-down bone, granulation masses, and cheesy material. The wound over the mastoid process was left open for the more thorough drainage of the petrous portion of the temporal bone. On account of the weakly state of the child, it was not thought wise to deal with the cervical glands at this time, but these were found extensively involved, chiefly along the anterior border of the sternomastoid muscle in the line of the jugular vein. The child having improved considerably, the gland operation was done on 19th January, 1907. Several of the glands were broken down, several were cheesy in the centre, a good many were merely enlarged, no degeneration having set in. On 2nd September further curretting of the glands and of the post-auricular wound was performed, and on 10th December curretting was again performed; but at the last operation little was removed either from the neck or the mastoid area, both ceased to discharge almost at once after the operation, and no further discharge appeared in either locality. During the whole of the year 1907 the general health of the child remained good.

On 27th January, 1908, I was asked to see the child because of symptoms which pointed to meningitis—temperature of 100° F., slight fits, and a tendency to stupor. The right pupil was dilated and fixed, and the pulse was slow.

The child was examined under chloroform, but no discharge was found in the ear, and there was no bad odour, although a small loose fragment of bone was removed from the mastoid process, the wound over which had to be widened for the purpose. During the next few days coma deepened, respiration became more cerebral, the pulse and temperature kept normal or subnormal, and it became clear that the diagnosis of uncomplicated meningitis must be given up. The most probable causes of the symptoms seemed to be brain abscess or tuberculous tumour of the brain. The cerebro-spinal fluid secured by puncture was clear, and free from organisms. On 2nd February both the middle and posterior fossæ of the skull were opened, in the hope that an abscess would be discovered. No pus was found, however, and the child died on 5th February.

The *post-mortem* examination, performed on 8th February, showed some meningitis of the base, chiefly on the right side, the side opposite the affected ear, and a small tuberculous tumour of the pons near the floor of the fourth ventricle. Dr. Leitch, who did the examination, will show the specimen and describe the conditions present.

The case is remarkable in respect that in spite of the cure of the disease in the temporal bone and in the neck, death occurred from a somewhat uncommon lesion in the brain, to which the infection had not spread directly from the temporal bone, as it usually does in otitic meningitis, but had reached the pons by a circuitous route, conveyed, no doubt, by the circulation.

The following is the *post-mortem* report by Dr. J. W. Leitch:—

“The head only was examined, in deference to the wishes of the parents. Externally there were the marks of the operation on the mastoid and glands of the neck described by Dr. Kerr Love.

“On removing the calvarium and dura mater no excess of cerebro-spinal fluid or flattening of the convolutions was noticed. A lepto-meningitis was found at the base of the brain, being most marked on the right side in the region of the fissure of Sylvius, where there was a considerable amount of purulent fluid between the convolutions. With this exception pus was not present in quantities visible to the naked eye.

“The first incision through the crura cerebri revealed a caseous nodule, about the size of a small pea, in the anterior part of the pons on the left side. It was deeply situated, being

about two-thirds of the way up to the floor of the fourth ventricle. There was no definite area of inflammation round it.

"Another smaller nodule was found on the right occipital lobe just under the pia mater.

"The ventricles were not distended, and nothing else was found of an abnormal nature.

"With regard to the cause of death, probably this is to be attributed to the meningitis. The tumours were too small in themselves to account for death, but the situation of one of them was sufficient to completely mask the meningitis. As you will see, it is situated below the floor of the fourth ventricle, and to that is due, no doubt, the slow pulse, the normal temperature, and the respiratory disturbances.

"F. W. Mott, in Quain's *Dictionary of Medicine*, states that 'slowing of the pulse, when it occurs as an early symptom, points to a tumour of the medulla,' and this is probably because of its proximity to the fourth ventricle. It will readily be understood that even a tumour small enough to be negligible, so far as bulk is concerned, may during life cause an amount of œdema around it sufficient to seriously disturb the function of the vagus by pressure on its nucleus in the floor of the fourth ventricle."

### III.—UNUSUALLY LARGE EXTERNAL FIBRO-CELLULAR TUMOUR OF THE NOSE.

BY DR. WALKER DOWNIE.

The tumour which I show you to-night was removed from the nose of a man 63 years of age. It was of many years' growth, and it had gone on steadily increasing in size until it had attained the proportions shown in the photograph.

He had been a regular consumer of alcohol, in its more ardent forms, for a long series of years, without there being, however, any serious or prolonged gastric trouble.

Many sufferers from similar tumours of the nose are specially sensitive, and try to avoid the gaze of their fellows. Not so with our patient; and thus he was a man of mark, known to the natives of, and visitors to, the town of his abode.

I have been told that during holiday seasons one might see children of visitors standing staring at the greatly enlarged nose. He, in turn, would stop and look at them for a time, and then, lifting the tumour to one side, would say, "Can ye

get bye noo, do ye think?"—a sense of humour which showed that his affliction did not bear so heavily on him as it might have done on many others.

On 24th September, 1907, I removed the tumour under chloroform. From the smooth skin over the bridge of the nose I formed a pointed flap, triangular in form. Then I made a second flap, somewhat tongue-shaped, continuous with the skin septum and from what should have been the skin septum and tip of the nose. I then dissected off the tumour from the nose, keeping the left forefinger in the naris on the side being operated upon, as a guide to the depth of the incisions employed in the peeling process.

When the tumour had been removed the lower tongue-shaped flap was split in the middle line, and the point of the upper triangular one brought down to the tip of the nose between the two portions of the split tongue-shaped flap. The several adjacent edges were united with horsehair sutures, and healing by first intention resulted. The second set of photographs, showing the nose after operation, were taken exactly ten days after the operation, which indicates the rapidity of the healing process in this case.

I regret that the patient will not consent to the publication of the photographs.

The microscopical sections, kindly made by Dr. Teacher, show the new growth to consist of fibro-cellular tissue and hypertrophied sebaceous glands.

#### IV.—STEREOSCOPIC PHOTOGRAPHS ILLUSTRATIVE OF CERTAIN EXTERNAL DISEASES OF THE EYE, PREPARED BY THE NEW (LUMIÈRE) COLOUR PROCESS.

BY DR. JOHN ROWAN.

Dr. Rowan showed a number of stereoscopic photographs illustrative of certain external diseases of the eye, prepared by the new (Lumière) colour process.

Among those shown were cases of interstitial keratitis, showing the characteristic teeth and scars at the angles of the mouth; also, strumous keratitis, blepharitis, ectropion, staphylo mata, &c. Dr. Rowan brought this method before the Society as at present it is comparatively unknown, and, it appears to him, it will become a valuable means of recording and contrasting the different stages of many diseases, perhaps more especially those of the skin.

At present the difficulty is the length of the exposure required, and this is increased, too, by the want of light, especially during the darker months of the year.

No doubt these difficulties will be overcome, and the records obtained will prove of permanent value.

V.—THE TREATMENT OF TRYPANOSOME DISEASES BY MEANS OF DRUGS.

BY DR. CARL H. BROWNING.

[ABSTRACT.]

Dr. Browning related, in brief, the results of chemotherapeutic experiments in trypanosome-infections, carried out by him under Professor Ehrlich's guidance in the Kgl. Institut f. exper. Therapie and the Georg Speyer Haus, Frankfurt am Main.

The first landmark in this field of research was the discovery by Ehrlich and Shiga of trypan-red. A single injection of this drug will certainly cure white mice infected with the trypanosomes of *mole caderas*. Untreated controls invariably die in four or five days.

The strain of trypanosomes chiefly employed by the author was that of *nagana*, which killed white mice in three days. The injection of the largest safe doses of atoxyl (first introduced for the treatment of trypanosomiasis by Thomas, of Liverpool) cured only 8 per cent. With acetyl-paramidophenylarsenic acid—a derivative of atoxyl, synthesised by Ehrlich and Berthelm, to whom the discovery of the constitution of atoxyl is due—over 93 per cent are cured. These figures refer to treatment twenty-four hours after inoculation. When treatment is deferred till forty-eight hours after inoculation the acetyl-derivative must be given in repeated large doses to effect cure.

A better method of treatment in advanced infections is by combining the most efficient drugs of different chemical types (e.g., acetyl-atoxyl plus trypan-blue), or by injection along with administration per os.

The curative results are not due to an internal antiseptis in the ordinary sense of the term, as neither atoxyl nor its derivative, nor trypan-blue, is trypanocidal in vitro. By treating infected animals with repeated small doses, there is ultimately produced a trypanosome-strain which is resistant to the largest doses of a drug of the same class. Thus, an *atoxyl-resistant* strain was developed which could not be

influenced by repeated large injections of the acetyl-derivative. Similarly, a trypan-blue-resistant strain and a para-fuchsin-resistant strain was developed; also, a strain resistant at the same time to all three types of drugs.

The bearing of these facts on the treatment of trypanosome diseases (sleeping sickness, &c.) in practice was discussed. Experiments showing immunity-phenomena were described, and it appeared that such phenomena did not enable one to make a classification of trypanosomes into species.

In reply to Dr. Arch. Young, Dr. Browning mentioned briefly the results hitherto obtained in the practical treatment of sleeping sickness and syphilis by means of atoxyl, and emphasised the necessity for the search for suitable derivatives and the employment of combinations.

[Dr. Browning's work appears *in extenso* in the *British Medical Journal*, 16th November, 1907.]

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## REVIEWS.

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*The History of the Study of Medicine in the British Isles.*

The Fitz-Patrick Lectures for 1905-6, delivered before the Royal College of Physicians of London. By NORMAN MOORE, M.D.Cantab. Oxford: At the Clarendon Press. 1908.

THE Finlayson Memorial Lecture, which appeared in our issue for April, introduced Dr. Moore to those of our readers who did not already know him, as an erudite antiquarian and bookman, and we are inclined to suspect that some, even among the habitual students of the *Glasgow Medical Journal*, were compelled to pause, if not actually to skip, when, in the course of their perusal of that very learned discourse, they arrived at the Gaelic quotations. The present volume is also a very able piece of work, which bears evidence of long and patient research on the part of one whose pleasure it is to pursue this line of study, and who has the gift of imparting historical and antiquarian information in such a form as to attract and please the reader.

Dr. Fitz-Patrick, in whose memory these four lectures were delivered, was a clever Irishman, who graduated in Dublin,

and became a member of the College of Physicians in London. Dr. Moore knew him personally, and describes him as one "who had read and re-read the great books of Greek and Latin, of English, French, German, Italian, and Spanish literature till they had become part of his mind." The first lecture is on medical study in London during the Middle Ages. It refers to physicians, medical books, and hospitals. It tells us about the last illness of King John; about the remarkable cures effected by Mirfeld's master; and about theriaca, an opiate which began with thirty-eight ingredients, but eventually had seventy-five. It was known five hundred years ago that in times of pestilence, vermin and brute beasts died as well as men, and that the animals sometimes died when men did not.

The second lecture describes the education of physicians in London in the seventeenth century. While a considerable number of medical men are referred to, Dr. Edward Browne is taken up as a type of the period. Browne, it will be remembered, was a son of Sir Thomas Browne, a President of the College of Physicians, a physician to St. Bartholomew's Hospital, and the author of a well-known book of travels.

The third and fourth lectures treat of the study of clinical medicine in the British Isles. A good deal of attention is given to Mayerne, through whom we get interesting information about the health of King James I and of different Queens of England. Naturally, too, we read about Harvey, Glisson, Sydenham, Willis, Sir Hans Sloane, and other distinguished representatives of British medicine in bygone days.

This interesting and learned volume includes 10 plates, 5 appendices, and an index. The text is worthy of the author, and the printing is equally worthy of the Clarendon Press.

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*The Romance of Medicine.* By RONALD CAMPBELL MACFIE, M.A. Aberd., M.B., C.M. Illustrated. London: Cassell & Co., Limited. 1907.

THIS is an excellent history of the healing art told in a volume of rather more than 300 pages by one who has read very extensively in preparing his subject, and who possesses the gifts of writing in good style, and making his narrative interesting to the reader. The book is written for the lay public, but members of the medical profession will find in it much that should interest them.

*Tests and Studies of the Ocular Muscles.* By E. MADDOX, M.D. Philadelphia: The Keystone Publishing Company. 1907.

THIS is an excellent book, and one which ought to be studied by every ophthalmic practitioner. It is a tolerably exhaustive treatise on a very important subject, for it gives a survey of the matter, which extends from the introductory chapter on the globe and its socket right on to the decentration of lenses to correct heterophoria. We have always been struck in reading Mr. Maddox's works with his ingenuity. He is well known as the inventor of the rod test for muscular deviation, a most useful invention, which is simplicity itself. Another example of the same spirit is to be found in the torsion calculator, a piece of apparatus which is very instructive. Maddox is not the inventor of the biprism, for that many long years ago was used by Fresnel, and all students of physics are aware that it is employed for the measurement of the wave length of light, but he certainly was the first to employ it for the detection of deviations. We have no hesitation in saying that Maddox's work is a credit alike to himself and to the British school of ophthalmology.

Ophthalmic science is, no doubt, a branch of the great healing art, but it more nearly approximates to physical science than does any other department of medicine. We have long been of opinion that without a fairly accurate training in physics a man ought not to enter this branch of the profession. The work under consideration is eminently practical. All the various methods of treating strabismus are fully discussed, and ample directions are given for decentration. The use of Maddox's tangent scale is also adequately explained. We find ourselves rather at issue with Maddox as to the word tangent scale being employed for his apparatus. To our mind the tangent of an angle is a definite function, the increase of which is not a constant; still, using the phrase as he uses it does not perhaps lead to serious error. We expect that ophthalmic students, both young and old, will study this book.

A habit much to be deprecated has arisen of leaving the centration of spectacles to spectacle vendors, in other words, there are prescribers who, by so doing, tacitly admit that a spectacle vendor may have a better knowledge of the scientific part of this work than the prescriber himself. What would be thought of a naval architect who, in designing



a boat, instead of accurately calculating where the engine was to be put, gave a general direction to put it in the proper place. That is not a whit worse than for an ophthalmic surgeon to tell the spectacle vendor to arrange for the centration of the lenses.

We have much pleasure in cordially recommending this book to ophthalmic practitioners.

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*A Guide to the Administration of Ethyl Chloride.* By G. A. H. BARTON, M.D. Second Edition. London: H. K. Lewis. 1907.

THE second edition of this little work has been brought well up to date, and the external appearance considerably improved by the substitution of stiff boards for the paper covers of the previous edition. Dr. Barton has produced an eminently practical monograph, which can safely be recommended to the practitioner who wishes to have in small compass a reliable guide to the administration, limitations, advantages, and dangers of ethyl chloride as a general anæsthetic. Of special interest are the author's descriptions of his method of giving ethyl chloride continuously, and a new sequence—the C.E.—ethyl chloride-chloroform—of which he speaks highly.

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*Diseases of Occupation, from the Legislative, Social, and Medical Points of View.* By THOMAS OLIVER, M.D., F.R.C.P. London: Methuen & Co. 1908.

THIS is a fascinating book, for which we tender the author our heartiest thanks. No one in this country is better entitled than Professor Oliver to write on occupational diseases; and in view of the immense importance of the subject, from the points of view of legislators, sociologists, philanthropists, medical officers of health, and medical men in general, as well as of the workers themselves, it is greatly to be desired that this volume, written as it is for the general reader, should be widely known among all responsible classes of the community. It gives us information about much more than disease, for it describes the method of work followed by many of the workers, and gives us much insight into their conditions of life. In the valuable introduction we get an

interesting history of factory legislation in Britain. Almost at the outset of the text, Professor Oliver calls attention to the great importance of alcohol as a factor in the production of industrial poisoning and accident, so that it is clearly our duty to welcome all reasonable measures which tend to reduce the amount of alcohol consumed by the general population, and particularly by the workers.

Some of the past records of industrial England, particularly as they apply to child labour, are appalling to the modern humane reader. Even in quite recent years, children of the age of 3 or 4 years and upwards were compelled to toil in the brickworks of the Midlands under circumstances which amounted to a cruel bondage. Here the amount of work which had to be done each day by these little ones was crushing. But there are many trades which are dangerous to life or to health through the risk of accidental injury, or of disease which is induced by the inhalation of a dust-laden or otherwise poisonous atmosphere, or by the introduction of pathogenic organisms into the body, or in some other way. Much has been already done to render dangerous trades safe, but much still remains to be accomplished, and it must be borne in mind that as new industries arise new perils are likely to assail the workers, and to demand the exercise of fresh ingenuity to circumvent them. Ganister-grinding, with its mortality of about 18 per cent per annum, must surely be one of the most deadly diseases of occupation of the present day.

This is a truly delightful and highly instructive book, and we strongly recommend it to all our readers.

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*Green's Encyclopedia and Dictionary of Medicine and Surgery.* Vol. IV, Gum-Resins to Intussusception; Vol. V, Inulin to Lumbar Puncture; Vol. VI, Lumbar Region to Nephrotomy. Edinburgh and London: William Green & Sons. 1907.

In these volumes of the *Encyclopedia* we have a continuation of this convenient work of reference. The fourth volume contains nearly 900 subject-headings, and several new articles have been added, of which we would notice those on *Homo Caudatus* and on recent views on Immunity. The former is an interesting summary of the question, and contains a description of Watson and Harrison's case. Recent views

on Immunity is a supplement to Dr. Buchner's long contribution on the subject, and concludes with a note on the practical use of vaccines.

In Volume V there are over 900 subject-headings, and new articles have been added dealing with Cleidotomy, Iodine and the Iodides, and the X-rays in Leukæmia.

The sixth volume contains more subject-headings (1,228) than any previous volume, excepting the second. The new articles in this volume deal with the Law as to the Medical Practitioner, with Mercury, and with the Metric System. An account is also given of the Midwives Act of 1902.

The volumes are of a high standard of excellence, and fully attain their aim of presenting in a convenient form reliable information to the busy reader.

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*Surgical Diseases of the Chest.* By CARL BECK, M.D. With 16 Coloured and 162 other Illustrations. London: Rebman, Limited. 1907.

IN his preface Dr. Beck refers to the present-day monopoly in surgical literature enjoyed by the abdominal cavity. The one special work on the *Surgery of the Chest*—that of Stephen Paget—appeared nearly twelve years ago, but Dr. Beck claims that since then the character of surgical work has been revolutionised by bacteriology, sepsis, and the Roentgen method. With regard to the second of these factors, we do not agree with the author, but the fact remains that the present work comes as a refreshing novelty.

The contents are arranged in a convenient way. There is a consideration of the anatomy and the surgery of the thoracic wall. In the thoracic diseases, the Roentgen method of examination, and subphrenic abscess are taken up, and the work concludes with a chapter on diseases of the mamma.

One criticism which we have to make is on the absence of details of the topographical anatomy of the heart and lungs and their serous envelopes. This omission is very noticeable, and we trust that the author will see his way to remedy it in a future edition. Again, the details of aspiration of the pericardial sac (p. 116) are quite clear, but on referring, as directed, to Fig. 73, the operator there is shown passing the needle *upwards* and inwards. There are several minor inaccuracies throughout the volume, *e.g.*, the posterior mediastinum is said to be bounded behind by the lower

border of the fourth vertebra (p. 126); and a sentence such as the following is unintelligible—"The signs of inflammatory atrophy of the bones due to absorption of calcareous matter are recognised as an expression of which the poor contrast between bony and soft tissues must be regarded" (p. 198).

The above notwithstanding, we must say that Dr. Beck has given us a most interesting book, which will repay reading. It is of a convenient size, is freely illustrated and clearly printed, and, although obviously intended for surgeons, it will be found by physicians to be of considerable use.

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*A Treatise on Orthopedic Surgery.* By ROYAL WHITMAN, M.D. Third Edition, Revised and Enlarged. With 554 Engravings. London: Henry Kimpton. 1907.

It is almost unnecessary to draw attention to this well-known work by an author who has established himself securely as an authority on the subject of orthopedics. The earlier editions were well thought out, and accurately as well as agreeably written.

The place in the estimation of the profession which these achieved was only such as was merited, and the edition now issued maintains and adds to the high standard of the earlier editions.

Thorough revision has been carried out, and a good deal of new matter has been added, including many new illustrations. The result is a work which comprehensively embodies the most important and generally accepted doctrine on this department of the healing art at the present time.

The eminent readableness and charm of the author's style, and the wealth of illustrations, greatly enhance the attractiveness and value of the volume.

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*Surgery, its Principles and Practice, by Various Authors.* Edited by WILLIAM WILLIAMS KEEN, M.D., LL.D. Vol. II. With 572 Text-Illustrations and 9 Coloured Plates. London: W. B. Saunders Company. 1907.

THIS continuation of Keen's *Surgery* is concerned chiefly with what one may call the work-a-day subjects of affections and injuries of bones and joints. Orthopedics, skin, nerves, and spine are also considered.

The volume runs to nearly 900 pages; of these, over 200

are taken up with fractures. This subject is from the pen of Dr. Daniel Eisendrath, of Chicago. Beginning with statistics showing the relative liability to fracture of individual bones, the author passes to consider the influence of sex, age, and season. A comprehensive scheme of classification is followed by an account of displacements, symptoms, complications, and repair. In the section on epiphyseal separation no mention is made of its effect on the subsequent growth of the bone. Otherwise this section is good.

The section on the treatment of fractures generally is good. With regard to operative measures, the author is in favour of the safe middle course, but he gives indications for operation. Special fractures are then considered. If we take that of the clavicle, we find no reference made to the effect of the coracoclavicular ligaments in preventing displacement of fragments; the Velpeau bandage is mentioned, but not described; and in Fig. 98 (a skiagram of fracture of the clavicle) the gap between the acromion and the clavicle is said to be "due to the lack of ossification of the *outer epiphysis*" of the clavicle. (The italics are ours.) Still, the author gives a fair account of this fracture and its treatment. Fractures of the lower end of the humerus are well done, and the illustrations convey a clear impression of the details of these injuries. The details of treatment in the section on special fractures will be found of great use.

Diseases of the joints are next considered. The pathological conditions are freely illustrated, and some good coloured plates are given. There is a tendency, however, to a want of detail. For example, no mention is made of late bending after excision of the knee; and the paragraphs on dislocated semilunar cartilage are somewhat scrappy. Again, in considering the pathology of morbus coxæ, no mention is made of disease beginning in the neck of the femur, and the writer seems to us to imply that in the majority of cases the disease is primarily in the acetabulum.

Of the remaining sections, that on nerves is good. At the commencement is a useful summary of the views held by different schools on "regeneration." The writer favours, on clinical grounds, the theory of peripheral regeneration. Birth-palsy of the brachial plexus is well described, and is accompanied by useful illustrations.

No expense has been spared in illustrating the text, while a special feature is the copious bibliography at the end of each section. Altogether, this volume is a valuable one, and we can recommend it to our readers.

*Indications for Operation in Disease of the Internal Organs.*

By Professor HERMANN SCHLESINGER, M.D. Authorised English Translation. By KEITH W. MONSARRAT, M.B., F.R.C.S.Ed. Bristol: John Wright & Co. 1906.

THE first thought which occurs to one in reading Professor Schlesinger's admirable work is the rapid change in the attitude of the profession towards the treatment of many medical affections by surgical means. Time was when the physician viewed with a certain amount of suspicion the surgeon's interference in what he considered his special domain. Happily, we now live under a different *régime*, and the value of the physician in full sympathy with the standpoint of the surgeon is now more apparent than ever. Whether the surgeon is attempting too much in certain conditions is a point which must be left for the future to decide.

In the author's preface it is stated that the work is essentially for general practitioners. We consider that the author has admirably succeeded in this, although many also in hospital practice will readily admit the great advantage to be derived from a careful perusal of its pages. Included in each chapter are remarks on the etiology, pathological anatomy, clinical course, diagnosis, and differential diagnosis, with the view of enabling the practitioner to quickly obtain a general grasp of the condition under consideration. These remarks are, however, subordinate to the main purpose of the work, viz., that of enabling the practitioner to arrive at an independent opinion on the advisability of operation in cases of internal lesion.

Dr. Schlesinger has drawn very largely from his great experience to give the book an added interest and to prevent it being a mere compilation.

It is not attempted to describe the various operations necessary in certain conditions. What the author conceives to be of chief interest to the practitioner are the indications, the contra-indications, and the results obtained after operation.

A work of this nature it is quite impracticable to submit to detailed criticism within the purview of a review. We should like, however, to specially express our appreciation of the chapter on Diseases of the Stomach, particularly with reference to gastric ulcer. In it the author lays down as indications for operation—

1. Small hæmorrhages recurring in spite of treatment, particularly when gastrectasis exists.

2. In cases of severe pain and persistent attacks of vomiting causing inanition, and not yielding to medical treatment, gastro-enterostomy is relatively indicated.

3. In perigastritis, gastric adhesions, subphrenic and peritonitic abscesses arising from ulcer, operation is absolutely indicated.

4. In ulcer perforating into the peritoneal cavity, operation is absolutely indicated as soon as possible after the first shock has passed.

The contra-indications to operation in gastric ulcer, the author concludes, are (a) single large hæmorrhage, and (b) chronic ulcer with hyperacidity and pyloric spasm until medical treatment has proved ineffectual.

We can confidently recommend this work to all practitioners, in the full assurance that much assistance will be given them in arriving at a decision in many cases that occur in practice as to the time and expediency of surgical interference.

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*Rotunda Midwifery for Nurses and Midwives.* By G. T. WRENCH, M.D. London: Henry Frowde and Hodder & Stoughton. 1908.

MIDWIVES as a class are worth catering for, judging by the number of text-books written for their benefit. The most recent is the *Rotunda Midwifery for Nurses and Midwives*, the teaching being based on the practice of the Rotunda Hospital, and closely following the requirements of the Central Midwives Board rules, which are printed as an appendix. The book is written in a conversational style, well suited both for the student and qualified midwife. The author has avoided the use of technicalities, which only puzzle the average nurse, and when medical terms are used the derivation and meaning are given.

The book is eminently practical, and the author has made it perfectly clear under what circumstances the midwife must send for assistance. We regard his teaching as dangerous when he states, "with regard to persistent offensive lochia I would give three days as the limit it should last," and his recommendation to treat this condition by raising the head of the bed and giving a purge is a waste of valuable time.

The book can be recommended as a safe and reliable guide for midwives.

*Diseases of Women: A Clinical Guide to their Diagnosis and Treatment.* By GEORGE ERNEST HERMAN, M.D.Lond., F.R.C.P. With 265 Illustrations. London: Cassell & Co., Limited. 1907.

THIS edition, the third, has been thoroughly revised by the author and brought up to date. A good description of chorion-epithelioma, based on Teacher's monograph, has been added. The microscopic appearance of uterine cancer, with a number of illustrations, has also been added, and also a description of the nature of urethral caruncles. The book will thus be found to be considerably improved. It is not a mere compilation, but it is based upon a very wide clinical experience.

The book is very fully illustrated. We have confidence in strongly recommending it.

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*A Text-Book of Obstetrics.* By BARTON COOKE HIRST, M.D. Fifth Edition, Revised and Enlarged. London: W. B. Saunders Company. 1906.

THE present edition of Professor Hirst's well-known text-book of obstetrics maintains the estimate formed of previous editions of this work, namely, that it is one of the best treatises on obstetrics in English.

The teaching is clear and dogmatic, based on an exceptional personal experience and a complete knowledge of all the scientific work of recent years in this department. The chapters on puerperal sepsis and gestational toxæmia have been carefully revised, the author incorporating in the text only the facts that seem at present clearly established. This work is eminently suited to the needs of the medical student and practitioner alike, and cannot be too favourably commended.

The publishers have produced this work in their usual excellent style.

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*Essentials of Bacteriology.* By M. V. BALL, M.D. Fifth Edition, thoroughly Revised by KARL M. VOGEL, M.D. London: Henry Kimpton. 1906.

THIS little book, as its name implies, contains the "essentials of bacteriology." And that this has been presented to the



reader in a form which is agreeable to him is evident from the fact that the book has now reached its fifth edition. Such a work needs, therefore, little recommendation from the reviewer. This new issue has been thoroughly revised so as to bring it abreast of the most recent advances in this branch of knowledge, but at the same time the form and general arrangement of the book remain as before.

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*Diseases of the Nose and Throat.* By CHARLES HUNTOON KNIGHT, A.M., M.D. London: Rebman, Limited.

To the general practitioner or student desirous of possessing a trustworthy and concise account of the diseases of the nose and throat, Dr. Knight's book can be heartily recommended.

The specialist also may consult it with profit. Too often is his mental impression of an ailment apt to become distorted, and his methods of treatment unduly restricted. This volume is a good corrective for both tendencies. It is written in a judicial spirit, the various sections are in proper perspective, and a liberal choice of methods of treatment and of medicaments is submitted. The author's extensive knowledge of the literature of the subject is evident.

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*A Handbook of Diseases of the Nose and Pharynx.* By JAMES B. BALL, M.D. Lond. Fifth Edition. London: Baillière, Tindall & Cox. 1906.

THE attainment of a fifth edition is a convincing proof that Dr. Ball's *Handbook* meets a want. Although the volume is a small one, and primarily intended for senior students and practitioners, there must be few established facts relative to diseases of the nose and throat of which mention is not made.

The theories advanced, opinions held, and statements generally made by the author are those commonly accepted by workers in this special department. No effort is made at individuality, which is perhaps best in a handbook of this kind.

As a sixth edition will almost certainly be called for, we would direct the author's attention to the obvious misprints or misspellings on pages 37, 43, 94, 121, 188, 241, 247, 299, and 314. Fig. 50, showing the method of removing the

anterior end of the middle turbinate, is absurd; the position of snare and forceps should be reversed. Has the author ever seen adenoids as depicted in Fig. 52? Bleeding polypi are not *always* situated at the anterior part of the septum (p. 206); they may grow from the ala. Exploratory puncture of the antrum from the inferior meatus was not first advocated by Lichtwitz, but by Moritz Schmidt (p. 239).

In a book of this size we think the author right to omit all references, and to mention writers' names in the more important connections only. The names of Killian and Freer should be associated with submucous resection of the deviated septum, and that of St. Clair Thomson more prominently with cerebro-spinal rhinorrhœa.

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*Transactions of the Twenty-Seventh and Twenty-Eighth Annual Meetings of the American Laryngological Association.* New York, 1905, 1906.

As in previous years, these *Transactions* contain much that is of interest and value to the specialist in throat and nose diseases. Of the twenty-seven papers that make up the first volume, all—with two or three exceptions—are of an eminently practical character. Freer gives a lengthy description of his method of treating deflections of the nasal septum. Walter F. Chappell contributes a careful study of the relation between laryngeal and pulmonary tuberculosis. George B. Wood presents a thesis on the lymphatic drainage of the faucial tonsils. Each year a "symposium" is held on a prescribed subject; at this meeting, sinus disease was dealt with in reference to the symptoms that demand radical surgical intervention, and the comparative results of conservative and radical methods of treatment.

Of the many good papers in the volume containing the *Transactions* of the Twenty-eighth Annual Meeting, we can make special mention of only a few. Dr. Emil Mayer reports a case of scleroma of the larynx. Dr. Crosby Greene presents an interesting communication on the lymphatic drainage of the larynx. We marvel at Dr. Otto Freer's recommendation to remove adenoids by means of "pernasal forceps." Dr. C. G. Coakley exhibits skiagraphs, showing in a remarkable manner various diseased conditions and anomalies of the accessory sinuses of the nose. The Symposium on Diseases of the Trachea is opened by a series of valuable papers dealing with hæmorrhages, tumours, stenosis, foreign bodies, &c.

*The Röntgen Rays in the Diagnosis of Diseases of the Chest.*

By HUGH WALSHAM, M.A., M.D.Cantab., and G. HARRISON ORTON, M.A., M.D.Cantab. London: H. K. Lewis. 1906.

IN this book, which consists of about 70 pages, the authors have undertaken to give as concise and accurate an account as possible of the value of *x*-rays in the diagnosis of diseases of the chest. It is divided into seven chapters. The first is a short one, describing the necessary apparatus and the method of procedure. Then follows a chapter on the normal chest, in which the authors describe minutely the appearances in the healthy state, and discuss the causes of the different shadows. They describe five positions in which to examine—the anterior, the posterior, the right anterior oblique, the left posterior oblique, and the left lateral. Anterior and posterior (left and right) indicate the position of the fluorescent screen. The right anterior oblique is of the greatest importance in studying the aorta, while the left posterior oblique is mainly useful in examining the œsophagus. This chapter closes with a discussion on the relative value of appearances seen on the screen and on the skiagram, and it is pointed out that both are necessary for a complete examination.

The three following chapters discuss the diagnosis of phthisis, pleurisy with effusion, pneumonia, emphysema, pneumothorax, bronchitis, abscess of the lung, hydatids of the lung, and new growth. We do not quite see why bronchitis is included in the list, as we are simply told that *x*-rays do not give us any assistance in the diagnosis of this disease. With regard to phthisis, the writers state that in a large number of cases the diagnosis can be made before any physical signs are discoverable, and a number of cases are described proving this statement to be true. For example, a child, supposed to be suffering from enteric fever, was *x*-rayed, and miliary tubercle diagnosed. The patient died a few days later, and the diagnosis was confirmed at the *post-mortem* examination. Other cases are described, in which early tuberculous disease limited to one apex had been diagnosed, and the *x*-ray examination demonstrated the presence of the disease on both sides.

The closing chapters are devoted to the heart, pericardial effusion, and thoracic aneurysm. We are told that in the diagnosis of thoracic aneurysm the "*x*-rays reach one of their most successful practical applications." It is pointed out how essential the right anterior oblique position is, and that it is

impossible to diagnose aneurysm from the radiogram alone. The plates illustrating the text are particularly good, and are all made from actual radiograms. There is a full bibliography making reference to close on a hundred papers and works, and the book is well indexed. As a practical guide to the examination of the chest by *x*-rays, and as a statement of what is attainable in this field, we think the work worthy of the highest commendation.

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*The Röntgen Rays in Medical Work.* By DAVID WALSH, M.D.Ed. Fourth Edition. London: Baillière, Tindall & Cox. 1907.

THE first 120 pages, constituting Part I, are from the pen of Dr. Lewis Jones, and are in the main descriptive of the various constituent parts of the apparatus, or rather, kinds of apparatus, which the worker in *x*-rays may choose to employ for their production. The penultimate chapter of these introductory pages is full of instructive details and valuable hints for the successful working of an *x*-ray outfit, expressed in lucid terms, and as concisely as is compatible with such a description.

In Part II, Dr. Walsh deals with "The Medical and Surgical Applications" of the *x*-rays. Two sections of this part, "Fractures and Dislocations" and "Medical Diagnosis by Röntgen Rays," are contributed by Mr. Lynn Thomas and Dr. Crane respectively.

The author may be congratulated upon having given a comprehensive and up-to-date statement of the functions of the *x*-rays not only from the diagnostician's, but also from the therapist's point of view.

The arrangement of Part II is good. The method of classifying the application of the rays to the various branches of medicine and surgery—not excluding dental and veterinary surgery—adds to the value of the book as a work of reference.

The author has very wisely included a section dealing with the medico-legal aspect of the Röntgen rays, which it would be well for all *x*-ray workers to read. We would also draw attention to the section entitled, "Action of the Focus Tube upon the Skin and Deeper Structures," as being well worthy of careful perusal. The illustrations, of which about 100 are skiagraphs, are well done, and form not the least attractive feature of the book.

As indicated by the author, it is at present in surgery that the most striking applications of the *x*-rays have been made, but he ventures to make the prophetic statement (in which we take the liberty of concurring with him) "that the Röntgen rays will some day render to medicine services not less conspicuous than those already conferred upon surgery."

In a work of such high level as this under review, we regret to record a grave error (p. 380) in the description of Sabouraud's method for the treatment of *tinea tonsurans*. We refer to the position of the pastille of Sabouraud et Noire. We venture to caution any worker, anxious to avoid vitiating results, against employing it in such a position. We feel sure, however, that this error will be corrected in the subsequent editions to which this work, no doubt, will deservedly run.

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*Post-graduate Clinical Studies for the General Practitioner.*

By H. HAROLD SCOTT, M.B. London: H. K. Lewis. 1907.

It has been said by a friendly critic of the medical profession that medicine is practised by the great majority of doctors, not for the love of scientific medicine and cognate pursuits, but for the everyday purpose of earning a living. Be that as it may, the attendance given at post-graduate lectures affords evidence that not a few practitioners are most desirous to keep up with medical progress, and to learn what more good they can do for their patients, irrespective of fees, thanks, or ingratitude, which they may ultimately receive. To a further class who, from age, pre-occupation, or remoteness, cannot attend lectures of this kind, the present volume appeals, in our opinion, more especially than to men residing near great hospitals.

In the book are discussed matters away from generalities and so-called systems, with which all are already more or less acquainted.

The purpose of the volume is unfolded when the writer, with adequate knowledge, practical experience, and personal convictions, presents his cases as they appeared to himself. He will secure, at least, respectful attention, gentlemanly consideration, and in all likelihood, grateful appreciation. From this general standpoint Dr. Scott was justified in preserving for the profession these lectures in a permanent form. That all readers will accept every explanation and argument as infallible can scarcely be expected. The specialties discussed almost preclude universal agreement, but the spirit in

which they are presented is attractive and pleasing, and this goes a long way to secure conviction.

There are 166 pages, of which 60 are devoted to a survey of specific disease in the army, and ought to interest greatly publicists, members of Parliament, and the army authorities. The welfare of the forces is, indeed, a national question. The extent, causes, personal and general treatment of venereal, are gone thoroughly into, and many diagrammatic tables are given to illustrate the text. A cautious renewal of the Contagious Diseases Acts, with certain qualifications, is advocated.

The other topics in the volume are cranial injuries—one soldier with a fractured skull is mentioned as having remained on duty for some days; the obscurities of sub-phrenal abscess, and pleural effusion; disseminated sclerosis; cerebral hæmorrhage, embolism, and thrombosis; endocarditis; and the complications met with in a case of enteric fever.

Chapter VII, "The Importance of a Naked-eye Inspection of the Fæces of Patients," reminds the present writer of one of his old teachers in the Glasgow Royal Infirmary who also held strong views on the importance of this medical examination. With him "feculent" was a blessed word.

Notwithstanding Burns' scathing sarcasm of Jock Hornbook, the inspection is certainly of some usefulness, particularly in detecting malingerers, diagnosing indigestions, and showing evidence of rectal troubles, with perhaps the necessity for surgical interference.

In addition to the author, both the printer and publisher have performed their respective parts satisfactorily.

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*The Ophthalmoscope: A Manual for Students.* By GUSTAVUS HARTRIDGE, F.R.C.S. Fifth Edition. London: J. & A. Churchill. 1907.

THIS is a useful and reliable guide to ophthalmoscopy, and that the reception accorded to it has been as favourable as it merited is indicated by the fact that it has reached a fifth edition though there are so many good text-books in the field of ophthalmology. The illustrations are numerous, and the coloured plates are very well done. The developments of photography of the fundus have curiously enough escaped mention. It is unfortunate that the term *keratitis punctata* is still employed for a condition which is merely a symptom of another disease. Otherwise, the book may be heartily recommended to students.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

## MEDICINE.

**The Serum Treatment of Epidemic Cerebro-Spinal Meningitis.** By Charles Hunter Dunn, M.D. (*Boston Medical and Surgical Journal*, 19th March, 1908).—Dr. Dunn, after surveying the various ineffectual attempts at treating this disease, reports a series of fifteen cases treated by using Flexner's antiserum. Of these cases, eight have resulted in complete recovery, two have died, and five are still pending. In the eight cases which recovered no sequelæ of any kind remain. The two fatal cases were both chronic, and had run a considerable course before coming under observation. Of the five cases, one is a chronic case and is expected to die, but the other four "will undoubtedly recover" (although one of these had a relapse since the paper was read).

A striking feature in the eight recoveries was the startling improvement immediately after the giving of the serum. In four it resembled the crisis of pneumonia, and was accompanied by a complete return of the mental condition to normal, disappearance of headache, and rapid disappearance of rigidity of the neck and all other signs. Two cases, in twelve hours after the first dose, returned from a condition of complete unconsciousness to one of absolute normal mental condition. Another point of importance is the "completeness of the recovery." Of the thirteen cases alive, eight have been for many weeks absolutely well; three are fully convalescent without evidence of any sequelæ; one has marked deafness, and the other is the unfavourable case, probably with hydrocephalus.

Early treatment is very important. All the cases in which the serum was given early recovered, and all cases which were followed by marked improvement were cases in which it was given within the first few days of the disease. It is recommended, if the fluid obtained on lumbar puncture is cloudy, to inject the serum through the same needle without waiting for the bacteriological report.

Flexner's work has been done at the Rockefeller Institute for Medical Research, and the serum is prepared in the same way as diphtheria antitoxin. It does not, however, as in that disease, neutralise the poison, but it hastens the disintegration of the specific organism and prepares it for phagocytosis.

The dose suggested is 30 c.cm. (as a maximum), to be repeated daily for three or four days.

In the same number of the *Boston Medical and Surgical Journal*, is the report of a meeting of the Suffolk District Medical Society of 19th February, 1908, at which Simon Flexner, M.D., spoke on the "Serum Treatment of Cerebro-spinal Meningitis." He reported results in 130 cases, of which 95 (73 per cent) recovered, and 35 (27 per cent) died. He called attention to the fact that after serum the recovery was by crisis in nearly one-half of the cases, while spontaneous recovery is usually by lysis; also to the probability that early injection of the serum renders recovery more likely. After the first period of improvement under serum has passed, relapses followed by recovery may occur. He expressed the belief that the serum acts partly by neutralising the toxin, partly by increasing phagocytosis and opsonising the micro-organism. As regards completeness of recovery, of the 130 cases of which he has complete records, in only three have any after-effects or complications occurred. In each of these there is more or less serious impairment of hearing.

Only two horses at present are yielding serum, so that the supply is distinctly limited, and it takes many months to immunise a horse before the serum can be used.—GEO. A. ALLAN.

**Experimental "Work-Arteriosclerosis."** By Oskar Klotz, M.D. (*Montreal Medical Journal*, March, 1908).—During the past four years much work has been done in experimental arteriosclerosis. It has been shown that substances like adrenalin chloride, barium chloride, digitalin and nicotine, which produce high pressure, are capable of bringing about arterial lesions, while certain bacterial toxins also produce definite effects. Controversy chiefly centres round the question whether the effects are toxic or mechanical.

Clinically, in the adult, it has been noted that more active organs show sclerosis earlier than others. Thus right radials are more considerably sclerosed than those on the left side in right-handed persons and *vice versa*, while occupations demanding much walking tend to produce more advanced changes in the vessels of the legs.

In the present experiments the author chose nine months' old rabbits, and he gives in detail the findings in the first of the series (he does not state the number of animals treated). The animal was treated for 130 days, by suspending him by the hind legs for three minutes each day, to increase the pressure and mechanical stress without employing any drugs. At first the animal was not apparently affected by this treatment, but later it showed signs of dyspnoea, and the heart-beat was accelerated, while towards the end the animal was much fatigued after each suspension.

At the autopsy the following was noted—there were no lesions on the cerebral vessels, and no hæmorrhage had occurred. The carotids were enlarged to about twice their size, with distinct beadings, white in colour and encircling the vessel in transverse rings. Similar appearances were found on the subclavian and brachial arteries. The heart was about one and one-half times its normal size. The walls of the aorta were thickened as far as the middle of the arch, and were firm and nodular. From the level of the sixth rib to the diaphragm there was a fusiform aneurysm with firm brittle walls with concentric rings. Below the diaphragm there was sclerosis of the aorta as far as the right renal and also the beginning of the celiac axis. The renals and iliacs were normal in appearance. Microscopically, two types of lesion were demonstrated. In the part of the aorta just above the diaphragm the changes were chiefly in the media, the middle zone showing a band of calcification almost encircling the vessel, and in this region aneurysm had resulted. In other parts the change was isolated in the intima, and consisted mainly of a proliferation of the tissue, while a secondary fatty degeneration had occurred in the newly formed tissue. The intima, where thickened, showed the hypertrophy to be in the muscle elements of the musculo-elastic layer.

The author concludes that work plays a very important rôle in the production of arteriosclerosis of different characters, and that in vessels of different structure sclerotic changes can be produced by increasing the work of the artery; and, further, as a consequence of the degenerative changes the result of increased work in the media of the vessels, aneurysms may result.

—GEO. A. ALLAN.

## SURGERY.

**Treponema Pallidum in Syphilis: Its Localisations.** By Ch. Fouquet (*Gazette des Hôpitaux*, No. 37, 28th March, 1908).—In April, 1905, Schaudinn and Hoffmann announced the discovery of a spiral parasite in syphilitic chancres, a result soon confirmed by others. In May of the same year Buschke found the same organism in the liver and spleen of cases of hereditary syphilis, since when many other localisations have been determined.



**Description.**—The parasite is a helicoid organism about  $7\ \mu$  long (varying from 4 to  $14\ \mu$ ), that is about the length of the diameter of a red blood corpuscle. Its thickness is from  $\frac{1}{2}$  to  $\frac{3}{4}\ \mu$ , this tenuity giving rise to a difficulty in seeing it easily under the microscope. The spiral is cylindrical in section, not flattened, and the spirals form a regular corkscrew of eight to fourteen or more turns. It is mobile, and presents movements of rotation round its axis, and, in addition, is said to exhibit also creeping movements by alternate compression and relaxation of the spirals. There is a flagellum at each extremity, and sometimes corpuscular bodies are seen attached to the sides or at the ends of the spiral.

**Cultures.**—Growths were first made by Levaditi and M'Intosh from the fluid obtained by scraping an inoculation chancre of a macaque monkey. This fluid was mixed with human blood serum previously heated to  $60^{\circ}\text{C}$ ., and the mixture enclosed in collodion sacs, and introduced into the peritoneal cavity of a monkey. The animal was then inoculated above the eyebrows with infective chancre material, and when primary symptoms appeared, was killed, with recovery of the collodion sacs *post-mortem*. One of the sacs contained a liquid abundant in organisms identical with that of Schaudinn. These authors also maintained vitality of collodion-enclosed cultures in passages through the peritoneal cavity of rabbits, with great increase in the numbers of organisms. Unfortunately, the cultures are not pure, while the virulence becomes quite lost by passage.

**Natural history.**—Reproduction is by some believed to occur by longitudinal fission, judging from the presence of a bifurcation at the end of the spiral in some examples. Others have noted types of much elongated spirilla, with a clear central zone suggesting segmentation; while, again, certain observers believe in a life cycle, of which the spiral form is only a stage. Schaudinn has suggested the name *treponema*, from the probable animal nature of the parasite, which seems to be allied to the trypanosomes. *Spironema* is not applicable, as this name is already used for another genus.

**Technique for recovery of the organism:** 1. *Films.*—Films are prepared from the chancre by carefully washing off the discharge, removing crusts, and expressing the reddish serum from the deeper parts. These are fixed usually by a mixture of equal parts of alcohol and ether, left on for five minutes, and then stained by Giemsa's or Marino's method. Giemsa's stain is—distilled water, 10 c.c.; glycerine, 15 minims; and Giemsa's blue (got commercially as a solution of azul blue in glycerine and methylic alcohol), 15 minims.

The films are stained from one to two hours, and good colouration is got. In Marino's method the films are taken without previous fixation, and covered with a few drops of Marino's blue; then, without washing, a feeble aqueous solution of eosine (1 in 20,000) is flowed over and allowed to remain on for two minutes, and, lastly, this is washed off with water, and the preparation dried and mounted.

2. *Blood.*—The above methods may be used, but, in addition, there are two others. In the process of Nattan-Larrier and Bergeron, 10 c.c. of blood is taken by venesection and divided into two parts, each being added to a flask containing 100 gm. of sterile water. Hydrohæmolysis occurs, and the mixtures are centrifugalised, the deposit being retained for film preparations. The films are dried, fixed, then left for twenty-four hours in 3 per cent silver nitrate solution, after which they are carefully washed with distilled water, and treated with tanno-gallic acid solution, or solution of sodium acetate, for a quarter of an hour.

After fresh washing, the films are again put into the silver solution till they acquire a dark-yellow tint. The leucocytes are coloured pale-yellow and the organisms black, and usually much precipitation is got by this method. In Ravaut and Ponselle's method a test-tube containing 30 c.c. of distilled water is taken, and 30 drops of blood are allowed to flow in from a puncture on the finger or ear. In contact with the water the red corpuscles become hæmolyzed, and a slight fibrinous clot forms in the liquid. Coagulation is finished in about three hours, and the coagulum then contains only white corpuscles and

microbic elements imprisoned in the meshes of the fibrin. The clot is removed on a platinum needle, washed, and dried on filter paper, then embedded and treated as a piece of solid tissue.

3. *Sections*.—In the organs sometimes films may be prepared from the juice, but, as a rule, sections are required. The section may be treated with silver nitrate solution and a reducing agent on the slide, but much better results are got from treatment of masses of tissue with later sectioning of the stained mass. The methods used are those of Levaditi, and of Levaditi and Manouélian, the latter being much more rapid. The details are found in the *Bull. de la Soc. de Biol.*, 20th October, 1905, and 20th January, 1906. [Levaditi's impregnation technique may be found in the recent edition of Muir and Ritchie's *Bacteriology*.—S. M.]

*Diagnosis*.—A certain amount of facility is required for the detection of spirilla stained in films. Silver preparations are easily studied, and the organisms are increased in thickness by the deposit, and consequently become much more apparent. Shreds of fibrin, chromatin, &c., are usually easily differentiated, but difficulty arises when other spirochætes than that of syphilis are present.

The spirochæta *refringens* commonly found on buccal and genital abrasions is distinguished by its thickness, its looser and less numerous spirals, and its greater staining affinity and deeper colouration. The spirochæta *dentium* is the smallest, recognised by its extreme tenuity. Vincent's spirillum, often associated with the fusiform bacillus of angina, is larger, more deeply stained, and occurs in great numbers. The spirochæta *pseudo-luetica*, noted in ulcerative gingivitis and noma, is large and deeply stained.

*Localisations in the tissues*.—The organism is found both in acquired and in hereditary syphilis, but much more frequently in the latter, being almost constantly found in all the organs of the syphilitic foetus. In acquired syphilis the chancre contains spirilla deeply situated. The ulcerated surface is the ground for saprophytic and contamination growth, but at the periphery of the chancre, especially round the connective-tissue of blood-vessels and lymphatics, the treponema alone is found. Some authors state that the nocturnal secretion of the chancre is more abundant in organisms, explaining, possibly, the nocturnal exacerbations of some syphilitic lesions.

The lymphatic glands are soon infected with the organism. In the roseola of the secondary stage the papillary vessels contain actual emboli of parasites, while in the other cutaneous secondaries, as acne, condylomata, and palmar psoriasis, it has been seen. Hoffmann and Beer noted that the Malpighian layer is invaded and the epidermal pigment destroyed, directly explaining thus the leucoderma which sometimes occurs. In secondary visceral lesions the demonstration of the treponema is not so easy, but it has been found especially in the suprarenals and in the neuroglia cells of the nervous system. In tertiary lesions it is rarely found, and has been noted in the blood-vessels (carotid and aorta), and in gummata.

In hereditary syphilis organisms are abundant in all parts, and have been seen in the placenta, umbilical cord, in syphilitic pemphigus bullæ, in the circulating blood, in the nasal mucus and expectoration, eyes, bones, liver, spleen, kidneys, suprarenal bodies, pancreas, lungs (especially in cases of "white" pneumonia), thyroid, thymus, testicle, ovary, intestine, heart, and nervous system.

The examination of the cerebro-spinal fluid has always been negative. Of the above organs, the most frequent sites are the liver, suprarenal bodies, and spleen.

*Effect of treatment*.—Mercurial treatment diminishes markedly the number of spirilla. In one striking case of chancre of the eyelid, with numerous spirilla in the discharge, after three injections of sublimate no organisms were found in sixteen preparations made. It is also stated that treatment diminishes the length of the organism, thereby possibly hindering their reproduction by segmentation. The preventive or abortive treatment by calomel ointment and atoxyl has not yet given undoubted results.—SPENCER MORT.

## GYNÆCOLOGY AND OBSTETRICS.

**The Supports of the Pelvic Viscera.**—Dr. W. E. Fothergill read a paper on this subject last December (*Proceedings of the Royal Society of Medicine*, Obstetrical and Gynæcological Section, vol. i). He points out that we can learn much about the so-called ligaments of the uterus during an abdominal section: we can see the broad ligaments lying loose and slack. The round ligaments pass backwards and downwards from the cornua before turning upwards and outwards towards the internal abdominal ring. In most cases the fundus is actually anterior to the line joining the two internal abdominal rings, so that, in a normal case, tightening the round ligaments would draw the fundus a little backwards. The utero-vesical and utero-sacral ligaments are seen to be mere peritoneal folds.

Again, clinically, we find the perineum torn into the rectum without prolapse of the uterus; also, we find cystocele or rectocele, or both, with a normally situate uterus.

Vaginal hysterectomy shows that it is the tissues round the uterine arteries which maintain the uterus in position—the so-called parametrium. The vagina and bladder are similarly held in position by the perivascular sheaths of their blood-vessels. It is into this parametrium that irritant fluids have been injected to cause artificial cellulitis, and so cure prolapse. Similarly, Alexandroff, for the same purpose, does an anterior colpotomy, and then draws together in front of the cervix the slack of the parametric tissues.

Considering these structures anatomically, Dr. Fothergill points out that as the gubernaculum testis draws down the foetal testicle, so the round ligament draws down the ovary and the Müllerian tube. The broad ligament is merely a mesosalpinx and mesovarium.

The superficial perineal muscles are, he holds, mere sphincters, which may help to keep in a loose uterus, but do not prevent its descent. The deep muscles of the pelvic floor are mere rudiments of the tail-waggers, and are functionally of little value.

The pelvic fascia should be regarded as the sheath of these effete muscles, of the vessels, and of the viscera.

The pelvic diaphragm does not support the pelvic organs by its muscular action, nor can it support them by its shape, were they not firmly attached to its sloping lateral walls.

This attachment is accomplished by the fibrous sheaths of the blood-vessels and the accompanying structures which supply the pelvic viscera. The one constant essential factor in the causation of prolapse is relaxation of the perivascular sheaths.

The rectum is separately attached to the back of the pelvis, and does not prolapse with the genito-urinary organs. In cases of rectocele, the anterior rectal wall is dragged down by its union with the posterior vaginal wall by cicatricial tissue, the result of infection during the healing of perineal tears.

In the discussion which followed, Dr. Fothergill's views did not meet with general acceptance, and Dr. Spencer pointed out that the dense ligamentum transversale colli lay at a lower level than the uterine artery.

—E. H. LAWRENCE OLIPHANT.

**Diagnosis of Rupture of Early Tubal Gestation.**—J. S. Fairbairn showed a specimen (*Proceedings of the Royal Society of Medicine*, Obstetrical and Gynæcological Section, November, 1907, vol. i) from a patient who died without operation about six hours after the first symptoms. At the time of her fatal attack the patient was only one day beyond her expected period, but she thought herself three weeks pregnant, as she felt during that time as she had felt when pregnant before. She thought herself in perfect health, but for a

few days had suffered from "indigestion." She had a meat lunch, and about 4 P.M. felt some gastric pain and lay down. Shortly after she vomited some semi-digested food; half an hour later she had diarrhœa and fainted. A doctor called in ascribed the symptoms to a gastric attack. About 9 P.M. she suddenly became cold, and the pulse at the wrist disappeared. She was restless and dyspnoic, and died at 10 o'clock. A *post-mortem* examination showed rupture of tube. Probably the initial shock had checked the bleeding, and only when the patient had somewhat rallied did the really serious hæmorrhage commence. Dr. Fairbairn mentioned two cases where the patients had died within a few hours, one of them within two hours, of the onset of symptom, and before operation could be attempted.

Dr. Giles had seen two similar cases—in one the patient had been under treatment for gastric ulcer with hæmatemesis, the other was definitely thought to be gastric, though tubal rupture was considered. Gastric symptoms were more frequent than the text-books would lead one to believe.—E. H. L. O.

**Late Menstruation.**—Dr. Whalen reports the case of a patient (*Illinois Med. Journ.*, April, 1908) who began to menstruate at 14, and up to her present age of 67 years and 4 months had menstruated regularly. She was married at 16, and had borne thirteen children and had had two miscarriages.—E. H. L. O.

**Asepsis of the Abdominal Skin.**—Schauta read a paper on this subject (reported *Zentralbl. f. Gynäk.*, April, 1908, No. 14). A considerable time ago Schauta had tried to protect the skin of the abdomen with an artificial skin ("rubber solution"), but had found the material liable to scale off, leaving the skin bare. He has lately tried it again, and tested its use by making cultures from the surface at various stages throughout his operations. They have proved negative, except for a few harmless bacteria from the air, and similar results have been obtained by painting the skin with iodine solution (the Austrian tincture is 1 and 15 alcohol). So far as possible he apposes the skin edges with metal clips, but these are not available when the skin is very thick. He advocates the use of rubber gloves at operations, and also to protect the hands in out-patient work, and in handling septic or dirty people.

In the discussion which followed, Chrobak emphasised the necessity for previous disinfection of the hands in case the gloves should tear, and that one might not lose the habit of conscientious disinfection in case of operation without gloves being found necessary.—E. H. L. O.

**Bismuth Injections for the Diagnosis and Cure of Abscess Cavities and Sinuses.**—Dr. Beck read a paper on this subject before the Chicago Medical Society (recorded with the discussion in the *Illinois Med. Journ.*, April, 1908). By means of injections of bismuth deeply into all the ramifications of a sinus, the x-ray will reveal the extent of the operation necessary. After some of his injections, Dr. Beck was surprised to find the sinuses and abscesses healed without operation, and he has obtained similar results in various sorts of cases since—empyema, tuberculous bone sinuses, psoas abscess, sinus after laparotomy, &c. X-rays show that the bismuth disappears.

The fistula should be dried out. The syringe should be thoroughly dry—sterilised by the dry method, and its plunger boiled in oil, not water. The emulsion should be hot, and, of course, sterile. It is to be forced slowly into the sinus till the patient complains of pressure. A pad is placed on the opening to prevent the escape of the injection, and an ice bag may be used to hasten hardening. Dr. Beck has had no accidents.

In his opinion, any material which will harden quickly will do as well as his formula. His formula is—Bismuth subnitrate, 30 parts; vaselin, 60 parts, to be mixed while boiling. For late treatment, 5 parts each of white wax and soft paraffin are added (hard paraffin is not absorbed). The soft injection is

continued while discharge of pus continues, and then the hard injection is used. Iodoform, or 1 per cent of formalin, may be added, if thought advisable.—E. H. L. O.

**Suprapubic Cæsarean Section.**—Paul Baum, of Breslau, in *Zentralbl. f. Gynäk.*, April, 1908, No. 14, records several cases in which he has performed Frank's operation. His experience has taught him the risk of infection of the pelvic cellular tissue where the patient has become septic before the operation, as one of his operations resulted in death from a large phlegmon. In such cases craniotomy, even of a living child, is to be preferred.

He makes his incision transversely through the abdominal wall above the bladder, divides the peritoneum on the front of the uterus, and separates this upwards. In his earlier operations, he then sewed the cut edge of the uterine peritoneum to the edge of the parietal peritoneum, so as to get an operation, so far as possible, extra-peritoneal. This must result in the uterine wound, which is also made transversely, becoming adherent in the wound of the soft parts, though he has not found retroversion resulting, as might have been expected. In his sixth operation he merely clamped the uterine peritoneum carefully to the parietal, and, after the extraction of the child, proceeded to suture the cut edges in their original positions—uterine to uterine and parietal to parietal.—E. H. L. O.

## DISEASES OF CHILDREN.

**Some Experiences and Observations on Congenital Syphilis in Infants.** By Dr. George Carpenter (*The British Journal of Children's Diseases*, February, March, April, 1908).—In the May issue of this *Journal* a full abstract was given of the February instalment of this important paper. In the March number Dr. Carpenter deals with the subjects of syphilitic adenitis, syphilitic nephritis in infants, the suprarenal capsules, the heart, syphilis of the mouth and respiratory organs.

**Syphilitic adenitis.**—Any of the accessible lymphatic glands may be found enlarged in cases of chronic "snuffles," or in cases with cranio-tabes. Carpenter has found the epitrochlear glands enlarged, and Lancereaux has stated that in cases of syphilitic splenomegaly the abdominal lymph glands are often enlarged.

**Syphilitic nephritis in infants.**—Carpenter enters very fully into the literature on this subject, and cites a good number of the observations of such writers as Speiss, Lancereaux, Coupland, Cassel, Massolongo, Fruhinsholz, Sutherland, Thomson Walker, and Bradley of Manchester (who was the first to recognise, and successfully treat, a case of syphilitic nephritis in an infant). He then enters fully into the history, clinical signs, and microscopical findings of a number of his own cases. The conclusions are—(1) That to the naked eye the kidneys of infants with nephritis often appear normal; (2) that there is no longer room for doubt that the syphilitic virus produces both parenchymatous and interstitial nephritis, in combination or separately; (3) "that in the infantile stages of the disease—both intra- and extra-uterine—parenchymatous inflammation is not only not unusual, but that this lesion may alone be found at the *post-mortem* examination." "On the other hand, when the typical products of parenchymatous inflammation are found in the urine, it must not be assumed on that account that the stroma is intact;" (4) "interstitial and combined interstitial and parenchymatous inflammation of the kidneys arises from other than syphilitic toxins"—so that the syphilitic toxine is not necessarily the sole origin of the cirrhotic kidney; (5) nephritis is now definitely recognised as capable of commencing in intra-uterine life.

**The suprarenal capsules.**—In about one in eight of syphilitic fetuses these

are found diseased. Virchow, Hecker, and others have noted their enlargement. In some cases the enlargement seems to be caused by the formation of disseminated nuclei and young connective tissue, as in the liver. Fatty degeneration may lead to almost complete transformation of this new tissue, and of the capsules, into a mass of oil-drops and granular detritus. In one of Carpenter's cases the enlargement of the capsules was very great (they were nearly the size of kidneys). "On cutting into them they each showed yellowish-brown discolouration, apparently the result of old hæmorrhages, lying in the midst of an opaque white substance. On microscopic section, taken at the junction of the opaque white medulla and the healthy cortex, the opaque white substance was seen to be fibrocellular tissue, very rich in polymorphous nuclei, and containing hyaline masses. These were of irregular oval shape, occupied about the fourth of the field of a high power, and stained fairly well; they contained a few nuclei of various shapes, and they sent processes into the surrounding fibrous tissue."

*The heart.*—"Myocarditis has been found in syphilitic fetuses, and it has been demonstrated in the heart of an infant, aged 6 weeks, by Hektoen." Kantzow recorded a case in which, adjoining an interstitial myocarditis, there was some muscular hypertrophy, which Virchow attributed to the neighbouring irritation, just as a periosteal gumma may excite bone formation in its vicinity. In a case of Coupland's "the heart muscle was firm and resisting, and of a uniform pale pinkish-yellow hue, the walls were thick, and they cut with a creaking noise." "There was an extensive infiltration of small round cells, most abundant round the small arteries; the muscular fibres retained their normal striated appearance." Gumma of the heart of congenital origin has been reported by Rosen, and in a case of Parkinson, the heart of an infant, aged 3 months, showed a characteristic gumma. Syphilitic endocarditis in a 6 months' old infant has been recorded by Forster. Carpenter believes that congenital syphilis may be a cause of congenital heart disease, as well as of some cases of fœtal endocarditis and carditis. (A case of coarctation of the aorta in a boy, aged 5 years, probably of syphilitic origin, has come under Carpenter's observation; it is referred to in an appendix to the April instalment of his paper.)

*Syphilis of the mouth, throat, larynx, and lungs in infants.*—These are not common in infants, though fetal manifestations have been recorded not infrequently. They are usually of later development. Exceptionally, however, even deep ulceration of the palate, pharynx, and naso-pharynx have arisen in early infancy. In one case of Carpenter's an infant of 4 months had an ulcer of the thyro-hyoid membrane, leading to a cavity under the muscles; there was also an ulcer on the dorsum of the tongue, and thickening of the aryteno-epiglottic folds was present. Periosteal thickening existed at lower part of left femur. The cry during life was aphonic, and the breathing was stridulous. In a child, aged 13 months, ulceration of the larynx and white hepatisation of the lung (described first by Devergie in 1831) were found. In a syphilitic child, aged 1 month, fleshy consolidation (splenisation) of the lung, of a fibroid nature, was found. The microscopical findings comprised—(1) changes in the alveolar septa, ranging from a condition of dilated capillaries in thickened alveolar walls, made up almost entirely of proliferated endothelium, to a state where the thickening was definitely fibrillar, with polymorphous nuclei and enlarged endothelial vascular channels—some of the capillaries showing leucocytal extravasation; (2) alveolar cavities packed tightly with cells, mostly catarrhal, but some, two or three times the size of these, highly granular or pigmented, and with poorly staining nuclei—also some granular detritus; (3) some of the alveoli with an appearance as of a lining of cubical epithelium apart from the broncho-pneumonia; (4) some alveoli plugged with fibrin associated with catarrhal cells, of which some were so poorly supplied with a protoplasmic envelope as to resemble small lymphocytes; (5) blood channels with only an endothelial lining surrounded by fibrous deposit; (6) numerous greatly enlarged capillaries in the thickened alveolar walls; (7) small fibrin clots with enmeshed small lymphocytes in

some of the smaller veins, and some of the capillaries blocked with lymphocytes; (8) these clots present also in the vasa vasorum and in the vessels within the bronchial walls; (9) large lymphocytes only occasionally present in them; (10) thickening of the external coat in a few arteries.

This plugging of the capillaries and smaller veins with lymphocytes and fibrin has been observed by Carpenter also in the broncho-pneumonia of congenital syphilitics.—ARCH. YOUNG.

(To be concluded.)

## NERVOUS DISEASES AND INSANITY.

**A Report of Twenty-seven Cases of Chronic Progressive Chorea.** By Arthur S. Hamilton, M.D. (*American Journal of Insanity*, January, 1908, vol. lxiv, No. 3).—In this article Dr. Hamilton gives the clinical records of twenty-seven cases of chronic progressive chorea, twenty of which were inmates of a State hospital, the remaining seven being seen in private practice.

In discussing the etiology of the affection, special emphasis is laid upon hereditary predisposition, and in no fewer than twenty-four of the cases there is a history of similiar disorders in collateral relatives. Apart from this, the records throw little light on the etiology of the disease. Traumatism, mental and physical, is suggested as an occasional causative factor, and in several instances the onset has been seen to follow acute fevers. Exhaustion from excessive physical exertion, domestic infelicity and overwork are also cited. In only five instances was any history of rheumatism elicited. Alcoholic excess appears to have been relatively unimportant, while in no case is there any history of syphilis.

Stigmata of degeneration, such as Darwinian tubercle and asymmetrical cranial formation, were fairly common, but apart from senile conditions, such as arcus senilis, arteriosclerosis, and anemia, manifestations of ordinary physical disorders were relatively infrequent. In only four instances are organic cardiac lesions recorded. Muscular vigour is said to have been diminished, exhaustion being seen in many of the cases, although in some, despite the presence of violent and continuous movement, there was no complaint of fatigue. The parts of the body first affected varied considerably, but owing to the insidious nature of the onset the question was difficult to decide. Ultimately, however, the movements extended in most instances until the whole body was involved, although, even when fully developed, great diversity was seen in the violence of the movements in various parts. These movements were to some extent controllable by volitional effort, and were absent during sound sleep, but not invariably during light slumber. Respiration was frequently affected, and cardiac arrhythmia, varying in degree with the severity of the general affection, was observed in two of the cases. Speech defect was present in most instances, in some, however, only when the disease was far advanced. Ptosis is mentioned as an occasional feature. In almost all the more pronounced cases, well-marked muscular tonicity is reported, but while in many there was increase of the knee-jerks, there is no record of any constant alteration of the other reflexes. Tactile and thermal senses appeared to be normal, but some degree of analgesia was frequently observed.

Mental impairment was a constant feature in these cases, but as in the case of the physical, the psychic phenomena varied in form and degree. In those affected early in life there was a pronounced degree of dementia—never so intense, however, as that seen in general paralysis—while in those cases in which the disease occurred later, there was more irritability but less intellectual impairment. Weakness of judgment and initiative, absent-mindedness, general

dissatisfaction, increasing selfishness, and irritability were among the earlier mental symptoms. Hallucinations and illusions were uncommon, while delusions, chiefly of persecution, but in some instances of a grandiose type, were of frequent occurrence. Associated with irritability violent outbursts of uncontrollable temper were met with, attempts at personal injury, or even murder occurring under these circumstances. In at least two cases, the patients evinced definite suicidal tendencies.

So far as the record goes, motor disturbances seem to have preceded the signs of mental impairment, but the author is convinced that while his cases do not appear to confirm the view, in many instances at least the mental disturbance is the first to appear, and that in the cases where hereditary predisposition is pronounced, and the disease appears in early life, the mental symptoms are usually the more prominent.—T. D. M'EWAN.

**Two Cases of the Polyneuritic Psychosis with Necropsies and Microscopical Findings.** By Chas. K. Mills, M.D., and Alfred Reginald Allen, M.D. (*American Journal of Insanity*, October, 1907).—When Korsakow first described the disease to which his name is now attached, he laid special stress on the presence of neuritis as being associated with the mental symptoms peculiar to the condition. He described cases in which there was no antecedent history of alcoholism, but where neuritis was present from some other toxic cause. Some other observers have recorded cases with typical mental symptoms without neuritis.

The polyneuritis in the two cases here recorded was probably due to special infection, as in one instance the disease began late in pregnancy, and in the other a few days after premature delivery. In both there was a history of alcoholism.

The examination of the cells of the cortex of the two cases here recorded showed that a condition was present due to neuronal toxæmia, and comparable to the affection found in the cells of the spinal cord. In the first case, that the nerves of both extremities were extensively involved in an inflammatory and degenerative process was shown by the symptoms during life, and also by subsequent microscopical examination. There was paralysis of the limbs; the muscles were tender on pressure, and showed when examined atrophy of the muscle fibres and degeneration of the nerve fibres in the muscle. The spinal and pneumogastric nerves also exhibited degenerative changes. In the cells of the anterior horn of the spinal cord in the cervical and lumbar enlargements there was considerable chromatolysis, with displacement of the nucleus and vacuolation. All the neuronal elements were thus involved. Similar cell changes were found in the cortex with cell infiltration round the vessels.

In the second case the physical symptoms were also those of multiple neuritis, pain, tenderness on pressure over nerves and on handling muscle masses, with paralysis and loss of superficial and deep reflexes. The pathological findings were similar to those of the first case, but the degenerative changes in the cells of the cortex were less marked, though the pia showed more involvement and was more adherent.

The mental symptoms of both cases were sufficient to justify the diagnosis of Korsakow's disease—loss of attention and recent memory, mental confusion, disorientation, and pseudo-reminiscence.

Reference is also made to the conclusions arrived at by other observers, and the opinion is expressed that the mental symptoms in Korsakow's disease are related in some way to the cortical changes quite apart from the neuritis which may be present.—C. J. SHAW.

**Observations on the Opsonic Index to Various Organisms in Control and Insane Cases.** By C. J. Shaw, M.D. (*Journal of Mental Science*, January and April, 1908).—For purposes of comparison between the healthy sane and the non-tuberculous insane individual the opsonic indices of a number of control and insane patients were estimated for five consecutive days to the tubercle bacillus, the bacillus coli communis,



staphylococcus aureus, and micrococcus rheumaticus, before the injection of Koch's new tuberculin—T.R.—and for some days thereafter.

The average index of the control cases for the five days to each of the various organisms was very similar, viz., to the tubercle bacillus, 1.08; to bacillus coli, 1.02; to staphylococcus aureus, 1.1; and to micrococcus rheumaticus, 1.07. In the insane cases the average indices were—to tubercle, 0.88; to bacillus coli, 1.06; to staphylococcus aureus, 1.07; and to micrococcus rheumaticus, 0.94. With the exception of bacillus coli, therefore, the average index of the sane was higher than that of the insane.

After the injection of  $\frac{1}{100}$  mgr. T.R., a negative phase was found to occur to the other organisms as well as to the tubercle bacillus, both in the control and insane cases. In the controls, however, the percentage of negative phases produced was less than that found in the insane, except to staphylococcus aureus. The fact that a negative phase to organisms other than tubercle followed the injection of tuberculin is against the view that the production of a negative phase is diagnostic of tuberculous infection. Even when a dose of  $\frac{1}{100}$  mgr. T.R. was administered, a negative phase resulted to the other organisms as well as to tubercle, but in a much smaller proportion than when the larger dose was given. After the injection of either dose, the number of cases in which a negative phase was produced was greater in the insane than in the sane. It is, therefore, concluded that the general resistive power of the former to organismal infection is less than that possessed by the latter class. On comparing the results obtained both before and after the injection of T.R. in the control cases and in the chronic and acute cases of mental disease, it was found that the more acute patients had a lower average index and a larger proportion of negative phases than either of the other two classes, and that in the chronically insane, though the average index to bacillus coli and staphylococcus aureus was higher than that found in the control cases, still the aggregate average index of the latter was higher than that of the former class, and they also had a higher proportion of negative phases than the control cases. The more chronic cases are, therefore, held to have a higher resistive power to organismal invasion than the more acute and recent cases, but are more liable to infection than the sane healthy population. In all classes of the insane the average index to tubercle was lower than that to any of the other organisms used, and this may explain their greater liability to tuberculous disease.

There were no marked local or constitutional symptoms produced as a result of inoculation, even with the larger dose. In a few cases there was a slight rise of pulse-rate, but such doses of T.R. can evidently be administered to non-tuberculous persons with perfect safety.

Immediately after injection there was an increase in the polymorphonuclear leucocytes in the control cases, which lasted for two days. The large lymphocytes also showed an increase for one day at least, but this increase did not occur at the same time as that of the polymorphonuclear cells. In the insane a similar blood reaction occurred, but the maximum leucocytosis was not reached as soon after injection. There was no constant relationship between the cytological and opsonic curves.

The amount of urea and chloride ingested in the food and excreted in the urine was estimated during the period the patients were under observation, but no definite conclusions were arrived at as to the effect produced on metabolism by the injection of tuberculin. The mental symptoms of the patients were not markedly affected.—C. J. SHAW.

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*Books, Pamphlets, &c., Received.*

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- Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. VII: Neurin—Physiology (Tissues). Edinburgh: William Green & Sons. (15s. net.)
- The Medical Annual: A Year-Book of Treatment and Practitioner's Index. Twenty-sixth year. Bristol: John Wright & Co. (8s. 6d. net.)
- A Manual of the Practice and Theory of Medicine, by Sir William Whitla, M.A., M.D., LL.D. In Two Volumes. London: Henry Renshaw. 1908.
- The Cause and Prevention of Consumption: Circular issued by the Illinois State Board of Health. Seventh revised edition. 1908.
- The Pocket Osteology, by Philip Turner, B.Sc., M.B., M.S. Lond., F.R.C.S. London: Baillière, Tindall & Cox. 1908. (3s. net.)
- Injuries of Nerves and their Treatment, by James Sherren, F.R.C.S. Eng. London: James Nisbet & Co., Ltd. 1908. (5s. net.)
- Supplementary First Aid to Miners, by William B. Arthur, L.R.C.P., L.R.C.S. Edin. 1908. (6d.)
- Hernia, Its Causes and Treatment, by H. W. Murray, F.R.C.S. London: J. & A. Churchill. 1908. (4s. 6d. net.)
- Treatment of Internal Diseases, for Physicians and Students, by Dr. Norbert Ortner; edited by Nathaniel Bowditch Potter, M.D.; translated by Frederic H. Bartlett, M.D. London: J. B. Lippincott Company. 1908. (21s. net.)
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- Tropical Medicine, Hygiene, and Parasitology, a Handbook for Practitioners and Students, by Gilbert E. Brooke. With numerous illustrations, including 26 plates. London: Charles Griffin & Co., Ltd. 1908. (12s. 6d. net.)
- Transactions of the American Climatological Association for the Year 1907. Vol. XXIII. Philadelphia, 1907.
- Clinical Lectures on the Surgical Diseases of the Urinary Organs, by P. J. Freyer, M.A., M.D., M.Ch. London: Baillière, Tindall & Cox. 1908. (12s. 6d. net.)
- Aids to Ophthalmology, by N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S. Eng. Fourth edition. London: Baillière, Tindall & Cox. 1908. (2s. 6d. net.)
- Medical Gynecology, by Howard A. Kelly, A.B., M.D., LL.D., F.R.C.S. Hon. Edin. With 163 illustrations, for the most part by Max Broedel and A. Horn. London: Sidney Appleton. 1908. (25s. net.)
- A Text-Book of Surgical Anatomy, by William Francis Campbell, M.D. With 319 original illustrations. London: W. B. Saunders Company. 1908. (21s. net.)
- Surgery, Its Principles and Practice, by Various Authors. Edited by William Williams Keen, M.D., LL.D. Vol. III. With 562 text-illustrations and 10 colored plates. London: W. B. Saunders Company. 1908. (30s. net.)
- Electrical Treatment, by Wilfred Harris, M.D., F.R.C.P. Illustrated. Cassell & Company, Ltd. 1908. (7s. 6d.)

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR  
THE FOUR WEEKS ENDING 16TH MAY, 1908.**

	WEEK ENDING			
	April 25.	May 2.	May 9.	May 16.
Mean temperature, . . .	38·1°	45·3°	49·8°	51·1°
Mean range of temperature between day and night, .	27·0°	27·0°	21·8°	22·3°
Number of days on which rain fell, . . . . .	1	4	7	5
Amount of rainfall, . ins.	0·01	0·91	1·01	0·48
Deaths registered, . . .	340	344	307	279
Death-rates, . . . . .	20·6	20·9	18·6	16·9
Zymotic death-rates, . .	2·3	2·0	1·9	1·5
Pulmonary death-rates, .	6·5	5·2	5·9	5·2
DEATHS—				
Under 1 year, . . . . .	68	77	76	55
60 years and upwards, .	67	89	64	63
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles, . . . . .	25	13	16	14
Scarlet fever, . . . . .	3	1	3	1
Diphtheria, . . . . .	3	2	5	1
Whooping-cough, . . .	4	11	7	9
{ Fever, . . . . .	2	...	...	...
{ Cerebro-spinal fever, .	5	5	5	1
Diarrhœa, . . . . .	8	9	4	7
Croup and laryngitis, .	1	...	...	...
Bronchitis, pneumonia, and pleurisy, . . . . .	68	64	72	54
CASES REPORTED—				
Small-pox, . . . . .	...	...	1	...
Cerebro-spinal meningitis, .	7	7	4	8
Diphtheria and membranous croup, . . . . .	28	14	14	15
Erysipelas, . . . . .	28	22	15	17
Scarlet fever, . . . . .	51	56	39	56
Typhus fever, . . . . .	...	...	1	...
Enteric fever, . . . . .	10	...	4	5
Continued fever, . . .	...	...	...	...
Puerperal fever, . . .	2	1	2	3
Measles,* . . . . .	314	321	304	285

\* Measles not notifiable.

# INDEX.

**ABDOMINAL** diseases, acute, symptomatology of. J. Patrick, 30.

## ABSTRACTS FROM CURRENT MEDICAL LITERATURE—

Diseases of children, 77, 394, 464.  
Diseases of the ear, 75.  
Diseases of the eye, 314.  
Diseases of the skin, 316.  
Diseases of the throat, 317.  
Gynaecology and obstetrics, 153, 462.  
Materia medica and therapeutics, 392.  
Medicine, 70, 231, 311, 389, 458.  
Nervous diseases and insanity, 155, 466.  
Public health and infectious diseases, 238.  
Surgery, 73, 148, 236, 313, 391, 459.

**Air-passages**, foreign bodies in, 317.  
**Ammonium oxalate** in blood-culture technique, 71.  
**Amyxorrhœa gastrica** and hyperacidity, 390.  
**Anæmia**, cerebral complications of. C. O. Hawthorne, 435.  
splenic. J. B. M. Anderson, 370.  
with degeneration of spinal cord. T. K. Monroe, 81, 127.  
**Anæsthesia**, local, in fractures, 236.  
**Anæsthetic apparatus**. J. K. Patrick, 375.  
**Aneurysm**. J. B. M. Anderson, 370.  
of external carotid. H. Rutherford, 373.  
hepatic artery. W. Rolland, 342.  
**Aneurysms on retinal arteries**. A. J. Ballantyne, 100, 126.  
**Ankle-joint**, cases of severe injury at. A. A. Young, 104, 134.  
**Antrum**, maxillary, empyema of. J. G. Connal, 301.  
part of tooth removed from, after six years. W. S. Syme, 297.  
**Amyotrophy**, diffuse spinal, in infant, 395.  
**Anus**, imperforate. G. B. Buchanan, 124.  
**Aorta**, rupture of, in case of dissecting aneurysm, 234.  
**Appendicitis**, diagnosis and treatment. A. E. Maylard, 6.  
discussion on, 135.  
**Area**, motor, tumour of, 155.  
**Arythmia** with unduly movable heart. W. K. Hunter, 367.  
**Arteriosclerosis**, 235.  
experimental, 469.  
**Artery**, hepatic, aneurysm of. W. Rolland, 342.  
**Ascites**, chylous, 72.  
**Aspeis** of abdominal skin, 463.

**Ataxy**, juvenile locomotor, ocular signs of, 815.

**BALLANTYNE**, A. J.—Albuminuric retinitis with vascular changes: aneurysms on retinal arteries, 100.  
**Banti's disease**. W. K. Hunter, 366.  
**Benzidine test** for blood in fæces, 70.  
**Benzine** method of cleaning wounds. J. A. Adams, 371.  
**Beri-beri**, ship, 238.  
with rash. T. K. Monroe, 363.  
**Bismuth injections** for diagnosis and cure of of abscesses and sinuses, 463.  
**Blackwater fever**, quinine as cause of. D. M'Cay, 194.  
**Blood** in menstruation, pregnancy, &c., 153, 154.  
**Blood-platelets** in menstruation, pregnancy, puerperium, &c., 153.  
**Blood-pressure**, fall in peritonitis, its treatment, 152.  
**Bone**, regeneration of, 148.  
**Books**, &c., received, 79, 158, 239, 319, 399, 469.  
**Brain**, abscess of: rupture into ventricle: post-mortem. A. A. Gray, 298, 414.  
motor area of, case of injury. G. B. Buchanan, 178, 298.  
**Branchial remains** and epithelioma, 237.  
**BUCHANAN**, G. B.—Case of injury to the motor area of the brain, 178.

**CÆSAREAN** section, suprapubic, 464.  
**Calcium metabolism**, 398.  
**Calculus**, renal, cases of. D. Newman, 201.  
**Calmette's** ophthalmic-reaction. A. Napier, 4.  
**Cases**, surgical. J. C. Renton, 433.  
**Cerebral tumours**, diagnosis between cortical and subcortical, 155.  
**Chorea**, chronic progressive, 466.  
**Chyluria** in filariasis, 312.  
**Coley's fluid** in treatment of sarcoma, 313.  
**CONNAL**, J. G.—Purulent otitis media, involvement of sigmoid sinus, operation, ligation of internal jugular, septic abscess of lung, recovery, 274.  
**Consumptive sanatoria**. D. Lawson, 161.  
**Cord**, spinal, degeneration of, with anæmia and gastric ulcer. T. K. Monroe, 81, 127.  
**Correspondence**, 420.

- Cortical and subcortical lesions, diagnosis of, 155.
- CURRENT TOPICS—**  
 Glasgow University examinerships, 51.  
 Medical service of territorial army, 51.  
 Lord Lister and the freedom of Glasgow, 115.  
 Medical appointments, 120.  
 The Finlayson memorial lecture, 120.  
 Dinner to Sir George Beatson, K.C.B., 121.  
 Medical officer of health for Glasgow and the University, 121.  
 Honour to a Glasgow graduate, Major John N. Macleod, I.M.S., 122.  
 Royal commission on ancient buildings in Scotland, 122.  
 "Glasgow Medical Journal," annual meeting, 198.  
 Royal Infirmary appointments, 199, 359.  
 Scottish Poor-law Medical Officers' Association, 199.  
 Electro-therapeutic section of the Royal Society of Medicine, 200, 292.  
 Western Medical Society, 291.  
 Medical education of women, 292.  
 Royal Army Medical Corps (Volunteers), Glasgow companies, 293.  
 Royal Infirmary club, 359.  
 Honour to Dr. Thomas Reid, 360.  
 Bellefield Sanatorium appointment, 360.  
 April examinations for public health diploma of Cambridge University, 360.  
 International congress on tuberculosis, 361.  
 Appointments to Maternity Hospital, 421.  
 Glasgow Royal Asylum, annual report, 421.
- CURRIE, J. R.—Serum disease in man after single and repeated doses, 277.
- DARIER's disease, cure of, 317.  
 Dextrocardia, acquired, associated with phthisis, 233.  
 Diabetes, causation and treatment of. A. Lorand, 321, 431.  
 paralysis of accommodation in, 315.  
 Diet, vegetarian, in psoriasis, 393.  
 Diphtheria and paralysis. A. B. Sloan, 58.  
 Disease, Darier's, cure of, 317.  
 Disinfection of hands, 391.
- EAR cases. J. K. Love, 426.  
 disease and vertigo, 75.  
 symptoms after mumps, 76.  
 tuberculosis of. J. K. Love, 436.
- EASTERN MEDICAL SOCIETY: TRANSACTIONS OF—**  
 Meeting i, 60; meeting ii, 60; meeting iii, 61.  
 CAMERON, S. J.—Ovarian tumours, 301.  
 PRINGLE, J. H.—Demonstration of surgical cases, 301.  
 CONNALL, J. G.—Diagnosis and treatment of empyema of maxillary antrum, 301.  
 LAWSON, D.—Consumptive sanatoria: are they worth while? 302.
- Electrical and light treatment. J. R. Riddell and K. Chapman, 423.  
 Encephalitis, acute, in infants, 394.  
 Epilepsy and hemicrania, 156.  
 thyroid treatment, 392.  
 Epithelioma of neck from branchial remains, 237.  
 Exostoses, multiple, in rachitic subject. A. Young, 183, 207.  
 Eye diseases, coloured stereoscopic photographs of. J. Rowan, 439.  
 demonstration of. A. M. Ramsay, 423; J. Rowan, 427; H. W. Thomson, 427.  
 Eyeball, wounds of, by glass, 316.
- FACIAL spasm cured by alcohol injection, 315.  
 FERGUS, F.—Lachrymation: its causes and treatment, 363.  
 Fever, blackwater, quinine as cause of. D. M'Cay, 194.  
 Filariasis and chyluria, 312.  
 Finlayson memorial lecture. N. Moore, 241.  
 Faeces, test for occult blood in, 70.  
 Fetus, premature, leucocytes in, 154.  
 Foreign bodies in gullet and air-passages, 317.  
 Fractures and local anaesthesia, 236.  
 FULLERTON, R.—(Esophagoscopy, 403.
- GESTATION, tubal, diagnosis of early rupture, 462.  
 "Glasgow Medical Journal," annual meeting, 198.  
 Glasgow meteorological and vital statistics, 80, 160, 240, 320, 400, 470.  
 Glossitis, acute, ending in suppuration. W. Downie, 204.  
 Goitre with laryngeal paralysis, 318.  
 GRAY, A. A.—Case of cerebral abscess: rupture into lateral ventricle: post-mortem, 414.  
 Gynaecology, medical and surgical treatment in, 154.
- HAIRS, short-lived, development of. T. Reid, 1.  
 Hands, disinfection of, 391.  
 Hemicrania, psychic phenomena in, 156.  
 relation to epilepsy, 156.  
 urine in, 156.  
 Heml-spasm of face cured by alcohol injection, 315.  
 Hepato-cholangio-enterostomy, 150.  
 Hospital, Royal Samaritan, a year's work. J. N. Stark, 327.  
 HUNTER, W. K.—Cirrhosis of liver in boy, 9 years' old, 89.  
 Hymen, cribriform. A. L. M'Iroy, 214.
- ILKO-SIGMOIDOSTOMY. H. Rutherford, 372.
- KELVIN, LORD, 205.  
 Knee-joint, internal derangements of, cases treated for. A. N. M'Gregor, 371.  
 Korsakow's syndrome without polyneuritis, 157.

- LABYRINTHITIS, acute, due to meningitis, 77.  
 Lachrymation: its causes and treatment. F. Fergus, 268, 299.  
 Laparotomy, treatment before and after, 151.  
 Larynx, paralysis of, in goitre, 318.  
   perichondritis of, in enteric, 73.  
   tuberculosis of, 318.  
 LAWSON, D.—Consumptive sanatoria: are they worth while? 161.  
 Leucocytes in premature fetus, 154.  
 Leukæmia, mixed-celled, 231.  
   spleno-medullary. G. S. Middleton, 362.  
   treated by x-rays. W. K. Hunter, 363.  
 Liver, antitoxic action of, and tuberculosis, 392.  
   cirrhosis of, in boy, aged 9. W. K. Hunter, 89, 134.  
 LORAND, A.—Causation and treatment of diabetes, 321.  
 Lupus carcinoma, 316.

- M'CAY, D.—Quinine sulphate as factor in causation of blackwater fever, 194.  
 M'GREGOR, A. N.—Means of observing and recording efficiency of urinary discharge per urethram, with diagrams, 401.  
 M'KENDRICK, J. S.—Mediastinal cancer occurring ten years after removal of breast, 106.  
   Macroglossia. W. Downie, 202.  
   Macrostoma. G. H. Edington, 134.  
 Mamma, cancer of, in pregnancy. A. MacLennan, 219.  
 Mastoiditis, serous, 75.  
 MAYLARD, A. E.—Diagnosis and treatment of appendicitis, 6.  
 Mediastinum, cancer of, occurring ten years after removal of breast. J. S. M'Kendrick, 106, 201.  
   tumour of. W. MacLennan, 434.  
 Medical relief in Glasgow, charitable and poor-law. A. K. Chalmers, 300.

#### MEDICO-CHIRURGICAL SOCIETY: TRANSACTIONS OF—

- SLOAN, A. B.—Case of severe diphtheritic paralysis, with remarks on relation between severity of attack and occurrence of paralysis, 53.  
 BUCHANAN, G. B.—Case of imperforate anus, 124.  
 BALLANTYNE, A. J.—Albuminuric retinitis with aneurysms on retinal arteries, 126.  
   case of syringomelia, with eye-symptoms, chiefly unilateral, 126.  
 MONRO, T. K.—Anæmia with changes in spinal cord, 127.  
 Card specimens.—J. G. Tomkinson, 127; A. MacLennan, 128.  
 EDINGTON, G. H.—Incision and drainage of pericardium in case of purulent pericarditis, associated with abscess in thigh, 128.  
 YOUNG, A. A.—Three cases of severe injury at ankle-joint, 134.  
 HUNTER, W. K.—Cirrhosis of liver in boy, aged 9, 134.  
 EDINGTON, G. H.—Card specimens, 134.  
 M'KENDRICK, J. S.—Mediastinal cancer occurring ten years after removal of the breast, with secondary nodulation over the head and trunk, 201.

#### MEDICO-CHIRURGICAL SOCIETY: TRANSACTIONS OF (continued)—

- NEWMAN, D.—Case of renal calculus, with special reference to diagnosis, 201.  
 DOWNIE, W.—Case of macroglossia, 202.  
   acute glossitis from injury ending in suppuration, 204.  
 President's remarks on death of Lord Kelvin, 206.  
 CONNALL, J. G.—Abnormal pulsation in the pharynx, 206.  
   case of middle-ear disease with involvement of lateral sinus, 207.  
 YOUNG, A.—Multiple exostoses in a rachitic subject, 207.  
 TAYLOR, M. L., and J. H. TEACHER.—Demonstration of double tumours, 208.  
 M'KENZIE, I.—Spirochæta pallida and syphilis, 212.  
 Card specimens.—J. Anderson, G. H. Edington, and A. MacLennan, 212.  
 Fresh specimens.—A. MacLennan, 294.  
 SYME, W. S.—Lateral sinus disease, operation, cure, 294.  
   Operative procedures in relation to disease of the frontal and sphenoidal sinuses, 296.  
   part of a tooth in the maxillary antrum removed after six years, 297.  
 BUCHANAN, G. B.—Case of injury to motor area, 298.  
 GRAY, A. A.—Abscess of temporo-sphenoidal lobe rupturing into lateral ventricle, 298.  
 FERGUS, F.—Lachrymation: its causes and treatment, 299.  
 President's remarks on death of Sir T. M'Call Anderson, 362.  
 Demonstration at Royal Infirmary by members of the staff, 362, 423.  
 LORAND, A.—Causation and treatment of diabetes, 431.  
 RENTON, J. C.—Surgical cases, 433.  
 MACLENNAN, W.—Mediastinal tumour, 434.  
 MACLENNAN, A., and J. S. DUNN.—Intracystic papilloma of accessory thyroid, 435.  
 MACLENNAN, A.—Functions of thymus, 435.  
 HAWTHORNE, C. O.—Cerebral and ocular complications of anæmia, and their relationship to thrombosis, 435.  
 POLLOCK, W. B. I.—Telangiectasis of retinal vessels, 435.  
 LOVE, J. K.—Aural tuberculosis, 436.  
 DOWNIE, W.—Large fibro-cellular tumour of nose, 438.  
 ROWAN, J.—Stereoscopic photographs of external eye diseases, prepared by Lumière colour process, 439.  
 BROWNING, C. H.—Treatment of trypanosome diseases by drugs, 440.  
 Meningitis, cerebro-spinal, due to bacillus typhosus, 390.  
   diagnosis by blood cultures, 70.  
   epidemic. A. Johnston, 136.  
   serum treatment of, 458.  
   tuberculosis, recovery from, 396.  
 Menstruation, late, 463.  
   pregnancy, &c., blood-platelets in, 153.  
 Molluscum contagiosum, 73.  
 MONRO, T. K., and M. B. HANRAY—Degeneration of spinal cord with severe anæmia in case of chronic gastric ulcer, 81.

- MOORE, N.—The Schola Salernitana: its history and the date of its introduction into the British Isles (Finlayson memorial lecture), 241.
- Motor area, injury to. G. B. Buchanan, 178.
- Mumps followed by ear symptoms, 76.
- NAPIER, A.—Calmette's ophthalmo-reaction, 4.
- New preparations, &c., 123, 422.
- NORTHERN MEDICAL SOCIETY: TRANSACTIONS OF—
- JOHNSTON, A.—Epidemic cerebro-spinal meningitis, 136.
- Discussion on treatment of chronic rheumatoid conditions, 136.
- STOCKMAN, R.—Some of the newer remedies, 302.
- Nose, diseases of. R. Fullerton, 428.
- large fibrocellular tumour. W. Downie, 438.
- OBITUARY—
- Anderson, Sir T. McCall, 115, 196.
- Davidson, J. F., 50.
- Frew, Alex., 115.
- Fulton, H. H., 291.
- Girvan, R., 50.
- Lees, R. Cowan, 358.
- McCowan, David, LL.D., 420.
- Reid, R. Douglas, 50.
- Service, J., 290.
- Whitson, Jas., 48.
- OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY: TRANSACTIONS OF—
- Specimens shown by E. H. L. Oliphant and J. M. M. Kerr, 213.
- M'ILROY, A. L.—Case of cribriform hymen, 214.
- KERR, J. M. M.—Ovarian fibroid complicating pregnancy: Caesarean section and removal of tumour, 216.
- MACLENNAN, A.—Carcinoma of mamma accompanied by pregnancy, 219.
- (Esophagoscropy. R. Fullerton, 408.
- (Esophagus, foreign bodies in, 317.
- Opsonic index in mental cases, 467.
- Ophthalmic-reaction for tuberculosis. A. Napier, 4.
- Organisms, pathogenic. D. McCrorie, J. A. Campbell, and L. Fraser, 431.
- Osteomyelitis and deafness, 76.
- Otitis media, suppurative, with aseptic meningeal effusion, 76.
- with involvement of lateral sinus. J. G. Connal, 207, 274.
- Ovary, fibroid of, in pregnancy: Caesarean section. J. M. M. Kerr, 216.
- Ovary, tumours of. S. J. Cameron, 301.
- Oxygen, mobile, in blood of pregnancy, 154.
- PAPILLITIS, acute, condition of central vein, 314.
- Paralysis, diphtheritic. A. B. Sloan, 53.
- Parathyroid, relation to calcium metabolism and tetany, 393.
- PATRICK, J.—Symptomatology of acute abdominal diseases, 30.
- Pelvic viscera, supports of, 462.
- Pericardium, incision and drainage of, in purulent pericarditis. G. H. Edington, 128.
- Perichondritis of larynx in enteric, 73.
- Peritoneum, pseudotuberculosis of, 311.
- Peritonitis, low blood pressure, treatment of, 152.
- Pernicious anemia. A. Harrington, 370.
- Pharynx, abdominal pulsation in. J. G. Connal, 206.
- Phthisis and x-ray examinations, 311.
- Pleurisy, chylous, 72.
- in infants and sign of the son, 77.
- Pneumonia and radiography, 78.
- Polycythemia, chronic splenomegalic, 232.
- Polynuritic psychosis, post-mortem findings in, 467.
- Pregnancy, ectopic. G. B. Marshall, 431.
- Pseudo-tuberculosis of peritoneum, 311.
- Psoriasis and vegetarian diet, 392.
- Pylorotomy, closure of duodenum after, 150.
- for cancer, successful. H. Rutherford, 374.
- RADIOGRAPHY in pneumonia of infants, 78.
- RAMSAY, A. M.—Diagnosis and treatment of diseases of the tear-passages, 14.
- REID, T.—Development, growth, and reproduction of the short-lived hairs, 1.
- Remedies, new. R. Stockman, 302.
- Retina, telangiectases in. W. B. I. Pollock, 435.
- Retinitis, albuminuric. A. J. Ballantyne, 100, 126.
- REVIEWS—
- ALLBUTT, T. C., and H. D. ROLLSTON.—System of medicine, vol. iii, 62.
- BAILL, J. B.—Diseases of nose and pharynx, 452.
- BALL, M. V., and K. M. VOGEL.—Bacteriology, 451.
- BARTON, G. A. H.—Administration of ethyl chloride, 444.
- BASTIAN, H. C.—Evolution of life, 223.
- BECK, C.—Surgical diseases of the chest, 446.
- BRZOLD, Dr. F.—Ohrenheilkunde, 65.
- BILL, A. F., *et al.*—Davos, 69.
- BLAND-SUTTON, J.—Tumours, 383.
- British pharmaceutical codex, 225.
- BUXTON, D. W.—Anæsthetics, 303.
- CAILLE, A.—Differential diagnosis and treatment, 221.
- CASPER, L., and C. W. BONNEY.—Genito-urinary diseases, 146.
- DEANESLEY, E.—Urinary surgery, 64.
- DIXON, W. E.—Pharmacology, 226.
- DOUGLAS, C. C.—Laws of health, 133.
- ELLIOTT, M. and G.—Public health acts, 230.
- GILL, R.—The  $\text{CHCl}_3$ -problem, 68.
- GOWERS, Sir W. R.—Borderland of epilepsy, 382.
- GRAY, A. A.—Labyrinth of animals, 373.
- Green's encyclopaedia, vols. iv-vi, 445.
- HALLIBURTON, W. D.—Chemical physiology, 388.
- HANDLEY, W. S.—Cancer of breast, 139.
- HARTRIDGE, G.—Ophthalmoscope, 457.
- HERMAN, G. E.—Diseases of women, 451.
- midwifery, 142.

## REVIEWS (continued)—

- HEWITT, F. W.—Anæsthetics, 306.  
 HILL, C.—Histology and organography, 222.  
 HIRST, B. C.—Obstetrics, 451.  
 KERN, W. W.—Surgery, 447.  
 KELLY, H. A.—Operative gynaecology, 66.  
 KNIGHT, C. H.—Diseases of nose and throat, 452.  
 LANGR, FR., and C. C. SONNE.—Degeneration in families, 230.  
 LUKE, T. D.—Anæsthetics, 148.  
 M'CAW, J.—Diseases of children, 387.  
 MACFIE, R. C.—Romance of medicine, 442.  
 MACNAB, A.—Ulceration of the cornea, 308.  
 MADDOX, E.—Ocular muscles, 443.  
 Medical annual, 381.  
 epitome series, 380.  
 MOORE, N.—History of study of medicine, 441.  
 MORTON, A. S.—Refraction of the eye, 68.  
 MOTNIHAN, B. G. A., and J. F. DOBSON.—Retropertitoneal hernia, 309.  
 MUIR, R., and J. RITCHIE.—Bacteriology, 64.  
 MUMMERY, P. L.—Sigmoidoscope, 307.  
 MURRELL, W.—What to do in cases of poisoning, 388.  
 NEW SYDENHAM SOCIETY.—Essays on syphilis and small-pox, 385.  
 NEWMAN, D.—Movable kidney, 303.  
 Nothnagel's encyclopedia: diseases of intestines, second edition, 63.  
 OLIVER, G.—Blood-pressure, 378.  
 OLIVER, T.—Diseases of occupation, 444.  
 PAGE, F. J. M.—Physics, 307.  
 PARSONS, J. H.—Diseases of the eye, 308.  
 POSEY, W. C., and W. G. SPILLER.—Eye and nervous system, 67.  
 Practical medicine series, 305.  
 RUSSELL, W.—Medical philosophy, 379.  
 SATTERLEE, G. B.—Human embryology, 142.  
 SAVAGE, W. C.—Bacteriological examination of water, 228.  
 SAVILL, T. D.—Neurasthenia, 225.  
 SCHLESINGER, Professor H., and K. W. MONSARRAT.—Indications for operation, 449.  
 SCOTT, H. H.—Post-graduate studies, 456.  
 SOBOTTA, Dr. J., and J. P. MACMURRICH.—Human anatomy, 309.  
 SWANZY, H. R., and L. WERNER.—Diseases of the eye, 304.  
 THEOBALD, S.—Diseases of the eye, 227.  
 THORINGTON, J.—Retinoscopy, 228.  
 THORNTON, E. Q.—Pocket medical formulary, 226.  
 Transactions of American Laryngological Association, 453.  
 VALLERY-RADOT, R., and Mrs. DEVONSHIRE.—Life of Pasteur, 147.  
 WALLIS, F. C.—Surgery of the rectum, 384.  
 WALSH, D.—Röntgen rays, 455.  
 WALSHAM, H., and G. H. ORTON.—Röntgen rays, 454.  
 WEBSTER, J. C.—Diseases of women, 140.  
 WERTHEIM, E., *et al.*—Vagino-peritoneal operations, 224.

## REVIEWS (continued)—

- WHARTON, H. R.—Surgery, 385.  
 WHITMAN, R.—Orthopedic surgery, 447.  
 WINCKEL, F. v.—Geburtshilfe, 143.  
 WRENCH, G. T.—Rotunda midwifery, 450.  
 YOUNG, J.—Medical history, 380.  
 YOUNG, J. K.—Orthopedic surgery, 310.  
 Rheumatoid conditions, discussion on treatment of, 136.  
 Ribs, cervical, symptoms due to, 389.  
 ROLLAND, W.—Aneurysm of hepatic artery: clinical and pathological notes of a case, with review of previously recorded cases, 342.  
 Royal Infirmary, demonstration at, by staff, 362, 423.  
 Rumination in child, 78.  
 SANATORIA, consumptive: are they worth while? D. Lawson, 161, 302.  
 Sarcoma, generalised, with blood changes, 231.  
 treated by mixed toxins, 313.  
 Schola Salernitana. N. Moore, 241.  
 Scurvy, 238.  
 Serum disease, 420.  
 in man, J. R. Currie, 277.  
 Sinuses, frontal and sphenoidal, operations for disease of. W. S. Syme, 188, 296.  
 Sinus, lateral, disease of, operation, cure. W. S. Syme, 294.  
 involved in case of ear disease. J. G. Connal, 207, 274.  
 Skin cases. A. Morton, 428.  
 Sou, sign of, in pleurisy of infants, 77.  
 SOUTHERN MEDICAL SOCIETY: TRANSACTIONS OF—  
 Discussion on appendicitis, 135.  
 CHALMERS, A. K.—Position of charitable and poor-law medical relief in Glasgow, and the need for organisation, 300.  
 MACLENNAN, A.—Treatment, prophylaxis, and prognosis of syphilis, 376.  
 Specimens, pathological. C. Workman, 430.  
 Spinal amyotrophy in infant, 395.  
 Spirochæta pallida. I. M'Kenzie, 212.  
 STARK, J. N.—A year's work in the Royal Samaritan Hospital for Women, 327.  
 Stomach ulcer, medical *versus* surgical treatment, 234.  
 and amyorrhæa, 390.  
 with anæmia and degeneration of spinal cord. T. K. Monro, 31.  
 Surgical cases. J. A. Adams, 370; J. H. Pringle, 372; H. Rutherford, 372.  
 SYME, W. S.—Operative procedures in relation to disease of the frontal and sphenoidal sinuses, 188.  
 Syphilis. A. MacLennan, 376.  
 congenital, 396.  
 in infants, 464.  
 Syringomyelia. J. M. Cowan, 369.  
 with unilateral eye-symptoms. A. J. Ballantyne, 126.  
 TABES, juvenile, ocular signs, 315.  
 Tachycardia, paroxysmal, with unduly movable heart. W. K. Hunter, 387.  
 Tear passages, diseases of. A. M. Ramsay, 14.

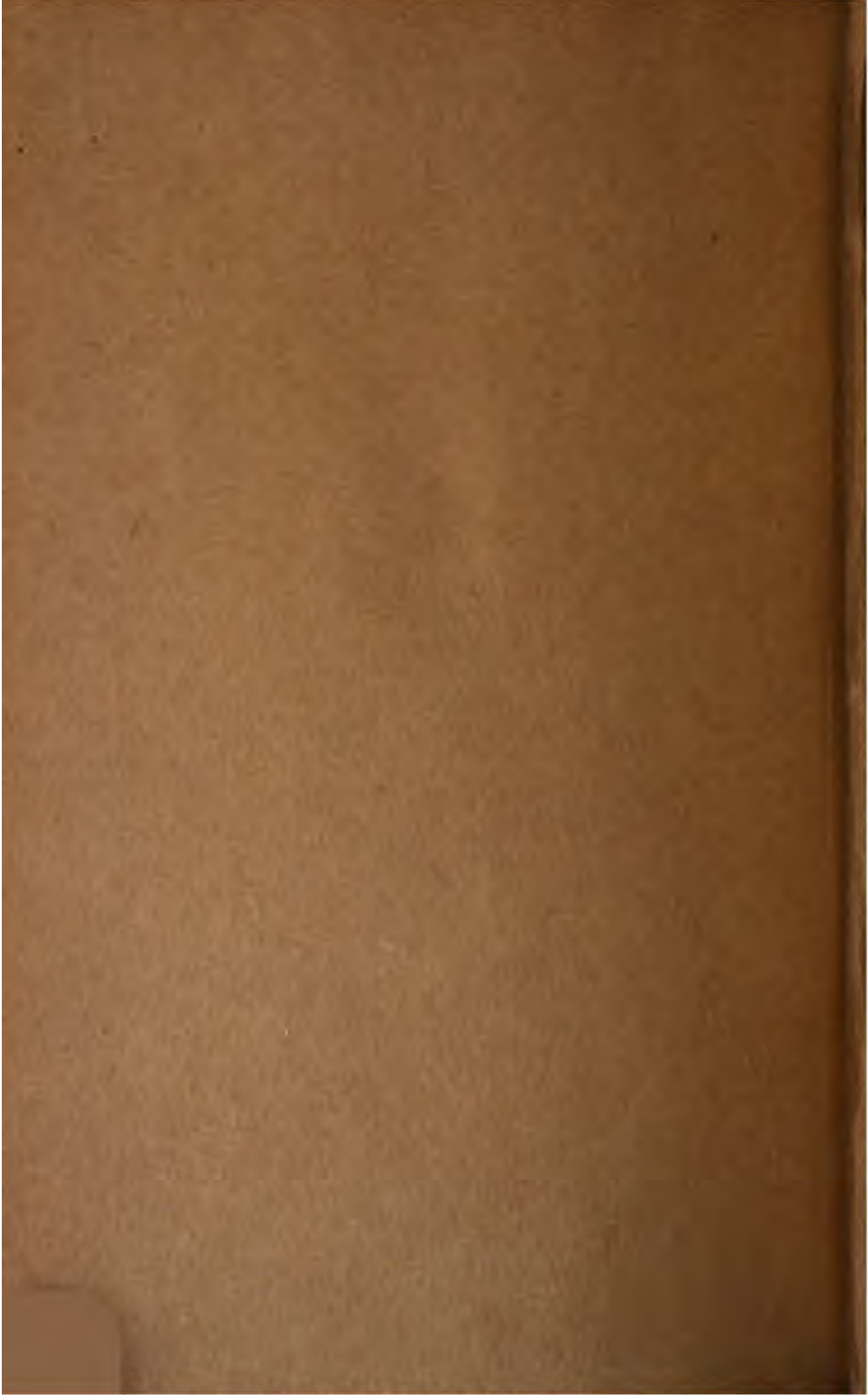


- Telangiectasis of retinal vessels. W. B. I. Pollock, 435.
- Tetany, 393.
- Thrombosis, cerebral, in anæmia. C. O. Hawthorne, 435.
- of femoral vein and congenital adhesions, 391.
- Thymus, functions of. A. MacLennan, 435.
- Thyroid, accessory, papilloma of. A. MacLennan and J. S. Dunn, 435.
- extract in migraine and epilepsy, 392.
- Torticollis, congenital, 238.
- Treponema pallidum, its localisation in syphilis, 459.
- Trypanosome diseases, treatment by drugs. C. H. Browning, 440.
- Tuberculosis and paratoxine, 392.
- Tumours, double. M. L. Taylor and J. H. Teacher, 208.
- Typhoid bacillus causing meningitis, 390.
- URETHRA, efficiency of discharge through, means of recording. A. N. M'Gregor, 401.
- resection of. H. Rutherford, 374.
- Urine, efficiency of discharge through urethra, means of recording. A. N. M'Gregor, 401.
- VEN, femoral, thrombosis in, 391.
- Vertigo in labyrinthine disease, 75.
- YOUNG, A. A.—Three cases of severe injury at ankle-joint, 104.
- YOUNG, A.—Multiple exostoses in a rachitic subject, 183.
- X-RAYS in phthisis, 311.

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